
Final 2000 Management Action Plan



Environmental Management Directorate
Robins Air Force Base, Georgia

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LIST OF ACRONYMS

AFB	Air Force Base
AFFF	Aqueous Fire Fighting Foam
AOC	Area of Concern
AST	Aboveground Storage Tank
BIA	Base Industrial Area
BTEX	Benzene, toluene, ethylbenzene, and xylene
CAP	Corrective Action Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHF	Contaminant Hazard Factor
CMS	Corrective Measures Study
CoC	Contaminants of Concern
DCE	Dichloroethene
DDT	Dichloro-Diphenyl-Trichloroethylene
DNAPL	Dense Non-Aqueous Phase Liquid
DoD	Department of Defense
DPDO	Defense Property Disposal Office
DRMO	Defense Reutilization and Marketing Office
DRO	Diesel Range Organics
EM	Environmental Management Directorate
EMQ	Environmental Compliance and Restoration Division
EOD	Explosive Ordnance Disposal
EP	Extraction Procedure
ERA	Environmental Restoration Account
FFA	Federal Facility Agreement
FPRS	Free Product Recovery System
FPTA	Fire Protection Training Area
FREON 113	1,1,2 - Trichlorofluoromethane
FS	Feasibility Study
GA EPD	Georgia Environmental Protection Division
GBIA	Greater Base Industrial Area

GWTP	Groundwater Treatment Plant
HRS	Hazard Ranking System
HWMU	Hazardous Waste Management Unit
ICM	Interim Corrective Measure
IRA	Interim Remedial Action
IROD	Interim Record of Decision
IRP	Installation Restoration Program
IWTP	Industrial Wastewater Treatment Plant
J-STARS	Joint Surveillance Target Attack Radar System
LF	Landfill
LNAPL	Light Non-Aqueous Phase Liquid
LTM	Long Term Monitoring
MCL	Maximum Contaminant Level
MEK	Methyl Ethyl Ketone
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
MIBK	Methyl Isobutyl Ketone
MPF	Migration Pathway Factor
MW	Monitoring Well
NAPL	Non-Aqueous Phase Liquid
NCP	National Contingency Plan
NFA	No Further Action
NFAR	No Further Action Required
NFRAP	No Further Response Action Planned
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operations and Maintenance
OU	Operable Unit
PA	Preliminary Assessment
PAH	Polyaromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethylene

PES	Parsons Engineering Science, Inc.
POL	Petroleum, Oil, Lubricants
PP	Proposal Plan
ppb	Parts per billion
ppm	Parts per million
PRG	Preliminary Remediation Goals
PSA	Potential Source Assessment
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RF	Receptor Factor
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
ROD	Record of Decision
RP	Real Property
SAC	Strategic Air Command
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SVE	Soil Vapor Extraction
SWMU	Solid Waste Management Unit
TCE	Trichloroethylene
TCLP	Toxicity Characteristics Leaching Procedure
TPH	Total Petroleum Hydrocarbons
US EPA	United States Environmental Protection Agency
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
µg/kg	Micrograms per kilogram
µg/L	Micrograms per liter

1.0 INTRODUCTION

Environmental clean-up activities at Robins Air Force Base (AFB) are part of a larger Department of Defense (DoD) environmental program called the Installation Restoration Program (IRP). IRP activities are primarily governed by two federal laws, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Resource Conservation and Recovery Act (RCRA). CERCLA establishes the legal requirements for identifying, investigating and cleaning up inactive hazardous waste sites. RCRA requires corrective action for releases of hazardous waste or constituents from past or present practices and operations which pose a threat to human health and the environment from any Solid Waste Management Unit (SWMU) at a storage, treatment, or disposal facility seeking a RCRA permit.

1.1 INSTALLATION RESTORATION PROGRAM

The Environmental Compliance and Restoration Division (EMQ) of the Environmental Management Directorate (EM) is responsible for implementing and managing the IRP at Robins AFB. Although the fundamental objectives and processes of both the CERCLA and RCRA corrective action programs are essentially the same, as shown in Chart 1, The IRP Process, there are subtle differences in the processes used to implement the RCRA and CERCLA corrective action requirements.

1.2 HISTORICAL OVERVIEW OF ROBINS AFB

Robins AFB traces its history to June 1941, when Macon civic leaders, with the help of U.S. Representative Carl Vinson, influenced the U.S. War Department to construct an Army Air Corps supply and maintenance depot in Houston County. The site was adjacent to the small town of Wellston which at that time had a population of about 50 people and was located some 15 miles south of Macon. The Defense buildup preceding World War II was under way, and the Middle Georgia area was chosen primarily because it had land for an airfield and an abundance of pure water. These were important points to consider in 1941 when emphasis was on speed of

construction. Ground was broken on November 9, 1941, by the first depot commander, Colonel Charles E. “Steve” Thomas, and leading members of the Macon business and political communities. In January 1942 the installation was officially named Robins Field in honor of Brigadier General Augustine Warner Robins, a native of Virginia and one of the Army Air Corps’ first General Staff Officers. Considered the Father of Modern Air Force Logistics, the general eventually became chief of the Material Division of the Army Air Corps, an antecedent of the present Air Force Material Command. Original construction was completed on March 14, 1942. On that same date, the air depot received its first official name of Wellston Air Depot. At the urging of Colonel Thomas, the city of Wellston changed its name to Warner Robins. Since that time, the depot has undergone a number of name changes: Warner Robins Army Air Depot in 1942; Warner Robins Air Depot Control Area Command in 1943; Warner Robins Air Service Command in 1943; Warner Robins Air Technical Service Command in 1944; and Warner Robins Air Material Area in 1946. It received its current name, Warner Robins Air Logistics Center, on April 1, 1974. The installation remained Robins Field until February 16, 1948, when it was renamed Robins AFB after the Air Force became a separate service. The decades following World War II were a time of challenge and change for the base. During the Korean War, Robins AFB workers, reduced in number by postwar cuts to 3,900, swiftly and heroically retooled and fitted hundreds of mothballed B-29s which played a key role in saving the Republic of South Korea from Communist aggression. In the 1960s and 1970s, Robins AFB played an important part in the Southeast Asia “Pipeline”, which supplied vital materiel to U.S. troops fighting in Vietnam. The changing requirements of a “Jet Age” Air Force added a new dimension to the logistics challenge and led to the development of Robins AFB as an avionics center and a huge, sprawling complex of diverse missions supporting the U.S. Air Force worldwide. That support was called upon once again during operations Desert Shield and Desert Storm in the Middle East. C-141 aircraft managed by the Warner Robins ALC were the backbone of the airlift to Saudi Arabia. C-130s, also managed by the center, provided valuable transport capabilities for the allied forces. Workers surged parts needed to keep aircraft flying and accelerated the maintenance and repair of aircraft vital to the war effort. Another Robins responsibility, the F-15 Eagle, proved its superiority during repeated air strikes over the Persian Gulf. Table 1, History of Base Operations for Robins Air Force Base, overviews these changing operations and their related activities.

2.0 ROBINS AFB SITE SUMMARIES

This section includes a complete index of all the sites (Table 2: Index of Robins Air Force Base Environmental Sites), a map containing the locations of each site (Figure 1: Management Action Plan Site Location Map), and site summaries which consist of site descriptions, phase status, governing regulations, and the relative risk rating (current as of July 2000). Because funding priorities for the Environmental Restoration Account (ERA) are established according to the risk a site poses relative to other similar sites, “Relative Risk” is included only for those sites that still require activities to be completed and are eligible for ERA funds.



SITE IDENTIFICATION NUMBER: SWMU No. 01 (LF01)

SITE DESCRIPTION: Landfill No.1

ENVIRONMENTAL CONCERN: Groundwater Contamination

**CONTAMINANTS PRESENT OR SUSPECTED: Construction Debris and
Municipal Solid Waste, Benzene, and TCE Groundwater Contamination
Integrated as Part of the Greater Base Industrial Area GBIA**

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 01 - Landfill No.1

Site Summary

Landfill No. 1 is located in the central portion of Robins AFB immediately adjacent to and partially below two above ground fuel storage tanks and their concrete containment structures. In the past, Landfill No. 1 and the JP-4 Spill Site were combined under the reference Zone 4, due to their proximity. Currently, these two sites are separate SWMUs. This 2-acre landfill was the first designated landfill on Robins AFB. A trench and fill type landfill that operated from 1946 until 1951 (when it was replaced by Landfill No. 2), received a daily cover of boiler bottom ash. The contents of the landfill generally consisted of refuse from the Robins AFB housing area. It may also have contained industrial waste which was commonly disposed of in Base landfills during the period when Landfills No. 1 and 2 were in operation. In 1983, a portion of the contents of Landfill No. 1 were excavated and disposed of off-base as solid waste to allow for the construction of the two fuel tanks.

The RFIs (RCRA Facility Investigations) performed in 1991, 1992, and 1996 found the following groundwater contaminants above method detection limits: trichloroethylene (TCE), tetrachloroethylene (PCE), dichloroethane, benzene, dieldrin, and naphthalene. With the exception of benzene, none of the groundwater contaminants were detected in the soil samples collected in the vicinity of Landfill No. 1. Because a majority of the landfill contents had been removed, no refuse was encountered during the RFI drilling procedures, and compounds in the soil were at concentrations below regulatory action levels, it was determined that it was unlikely that this site was a significant source of the groundwater contamination. Similar groundwater contamination was detected throughout the area in wells upgradient of the site.

The site closure document for Landfill No. 1 was submitted to the GA EPD in September 1991. As requested by the GA EPD, additional investigation of the groundwater contamination was performed as part of the Greater Base Industrial Area (GBIA) RFI. Approval of the RFI was received July 2000.

Relative Risk

The Relative Risk for this site is low due to limited contaminants and low potential for migration.

Phase Status

Response Complete



SITE IDENTIFICATION NUMBER: SWMU No. 02 (LF02)

SITE DESCRIPTION: Landfill No.2

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Municipal/Industrial Solid Waste

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 02 - Landfill No.2

Site Summary

Landfill No. 2 is a 22-acre former municipal solid waste landfill operated by Robins AFB from 1951 to 1963. Municipal and industrial wastes were reportedly buried in cells approximately 20 feet deep; however, soil borings indicate a waste mass ranging from only 6 to 11 feet in thickness. A daily cover of boiler bottom ash and/or soil was placed over the waste. Twenty-two hundred pounds of granular Malathion were reportedly disposed of at the site. The degradation mechanism for Malathion (hydrolysis, photolysis, and biodegradation) and the lack of analytical data detecting Malathion indicate that this material is not a contaminant of concern (COC).

A second site, Fire Protection Training Area No. 1 (FPTA No. 1), was located within the bounds of Landfill No. 2, as identified from aerial photos taken in 1947 and 1949. Because this second site is located within the boundaries of Landfill No. 2, FPTA No. 1 has been submitted for closure.

The COCs for Landfill No. 2, detected in the surficial fill materials at this site, are benzene, toluene, ethylbenzene, and xylene (BTEX) and chlorobenzene. Groundwater contamination for this site has been investigated under the GBIA RFI Phase II as requested by the GA EPD.

A CAP for Landfill No. 2 was completed and submitted to the GA EPD on September 30, 1996, with the recommendation of no further remedial action.

As requested by the GA EPD, additional investigation of the groundwater contamination was performed as part of the Greater Base Industrial Area (GBIA) RFI.

Relative Risk

The Relative Risk for the Landfill No. 2 site is rated as medium. This Relative Risk rating is due to the Migration Pathway Factor (MPF) being rated as Potential and the Receptor Factor (RF) for surface water/sediment being rated as Potential. However, it is important to note that the area is covered with thick undergrowth and wetlands downgradient are active and viable.

Phase Status

CAP



SITE IDENTIFICATION NUMBER: SWMU No. 03 (LF03)

SITE DESCRIPTION: Landfill No.3

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Municipal/Industrial Solid Waste

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 03 - Landfill No.3

Site Summary

Landfill No. 3 occupies approximately eight acres immediately west of and adjacent to Luna Lake. This site, operated from 1964 to 1967, contains general refuse and some industrial waste. Several grade-level open burn sites were present at this landfill from the mid-1950s until the mid-1960s. Training exercises at these open burn sites used ignitable wastes, including petroleum products, waste oil, paint residues, and solvents. The main COCs include VOCs, semi-volatile organic compounds, and metals.

Interim source control measures to entomb the waste have been implemented. The selected encapsulation system includes a flexible membrane liner over a bentonite mat barrier, a soil-bentonite slurry containment wall, a leachate collection system with vertical recovery wells, and a gas venting system. The gas generated by the landfill is treated with an enclosed flare gas treatment unit that was installed in March 1997.

The RFI was approved by the GA EPD in November 1991. The Draft Final CAP submitted in December 1995 to the GA EPD was reviewed and their comments on the CAP were addressed. The Final CAP for Landfill No. 3 was approved and incorporated into Robins AFB's hazardous waste permit in September 1998. The remedial measures for the site consist of a groundwater extraction system and force main piping that intercept the contaminants and transport them to the Groundwater Treatment Plant (GWTP). The construction project was awarded on March 31, 1999, and completed in May 2000.

Relative Risk

The Relative Risk for the Landfill No. 3 site is rated as high. This is because of the potential for exposure to both human and ecological receptors from contamination in the surface water. Groundwater seeps of the site's leachate occur at the base of the slope north of Luna Lake and downgradient of the site. The seeps run overland into an unnamed stream flowing eastward directly into wetlands bordering Robins AFB. The soil media also has a high associated risk because contamination has been noted in the shallow surface soils in this public recreation area.

The groundwater media is ranked medium because there are no water supply wells located downgradient in this aquifer, therefore the Receptor Factor classification is limited, even though the GA EPD classifies all groundwater as potential drinking water. The remedial actions address the groundwater seeps by intercepting the flow toward the identified receptor. Consequently, the migration potential factor is confined.

Phase Status

RA – O



SITE IDENTIFICATION NUMBER: SWMU No. 04 (LF04)

SITE DESCRIPTION: Landfill No.4

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Municipal/Industrial and Construction Solid Waste

REGULATORY MECHANISM: CERCLA – US EPA

SWMU No. 04 - Landfill No.4

Site Summary

Landfill No. 4 is a 45-acre landfill located in the central portion of Robins AFB adjacent to a bluff that forms the western boundary of the Ocmulgee River flood plain. The flood plain extends about one to two miles eastward to the river. Surface water in the area drains generally from west to east into the Ocmulgee River flood plain.

Landfill No. 4 was originally constructed by disposing of fill material into the flood plain and wetland area from the bluff advancing east toward the river. Landfill No. 4 was reportedly operated from 1965 until 1978 for the disposal of general refuse and industrial wastes. When it was closed, it was covered with a clay and sand fill approximately five feet thick. The COCs are carbon tetrachloride, 1,2-dichloroethene, tetrachloroethylene, vinyl chloride, arsenic, cadmium, chromium, and lead.

In 1982, Robins AFB conducted a basewide survey to identify and assess past hazardous waste disposal practices. Landfill No. 4 was considered to have the highest potential for migration of hazardous substances and, as a result, was placed on the CERCLA NPL by the US EPA in 1987. In accordance with the National Contingency Plan (NCP), CERCLA, and Superfund guidance and policy, Robins AFB entered into a Federal Facilities Agreement (FFA) in June of 1989 with the US EPA and the GA EPD. A 1.5-acre Sludge Lagoon (SWMU No. 14 or IRP No. WP14) located on the northern boundary of Landfill No.4 was also included as part of the NPL Site.

In 1990, the FFA party members divided the NPL site into three phases called Operable Units (OUs). OU1 is directed at the known sources of contamination and associated remedial actions for reducing the exposures from these known sources of contamination within the NPL site. OU2 was directed at the wetlands area that may have been impacted by the known sources of contamination in OU1. OU3 was directed at the groundwater beneath and adjacent to Landfill No. 4 that may have been impacted by the known sources of contamination in OU1. IRODs for OU1, OU2, and OU3 were approved in June 1991, February 1994, and August 1995, respectively.

Remedial actions for OU1 and OU3 were completed in 1998. The remedial actions consisted of solidifying the sludge lagoon (OU1), installing a series of recovery wells (OU3), installing a leachate collection system (OU3), and construction of a GWTP for treating the water collected from the above systems. Monitoring will be conducted for OU2 until a final ROD for the NPL Site is approved. It is expected that a final ROD for OU1 and OU3 will be approved by mid 2000 and the final ROD for OU2 by 2002.

Relative Risk

The Relative Risk for the Landfill No. 4 site is rated as High. This is because the Contaminant Hazard Factor (CHF) for groundwater is significant and the total concentration ratio is greater than 100. This CHF, combined with a migration pathway factor of evident and a receptor factor

of identified, results in the relative risk being rated as high. Once the remedial actions of the OU1 ROD and the OU3 IROD have been implemented, the relative risk should be reduced to medium because the migration pathway factor will be reduced to confined.

Phase Status

FS



SITE IDENTIFICATION NUMBER: SWMU No. 05 (FT05)

SITE DESCRIPTION: Fire Protection Training Area No.1

ENVIRONMENTAL CONCERN: Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Waste Oils, Fuels, and Solvents

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 05 - Fire Protection Training Area No.1

Site Summary

FPTA No. 1 was operated from 1943 until the mid-1950's in a bermed open area. Training exercises on this site consisted of pouring ignitable waste chemicals and petroleum compounds on the ground and then igniting, extinguishing, and re-igniting them repeatedly until they would no longer burn. The largest volume of waste material used included paint residue and wastes, thinners, solvents, and strippers.

RFIs accomplished in 1991, 1992, and 1996 indicated that groundwater plumes of chlorinated aromatic compounds, chlorinated aliphatic hydrocarbons, and petroleum hydrocarbons were present in the area. However, at that time the exact location of FPTA No. 1 could not be pinpointed. In 1998, aerial photos from 1947 and 1949 were discovered which showed that FPTA No. 1 had two locations for fire training exercises. One of these areas was located within the area of Landfill No. 2 and the other within the JP-4 Spill Site.

Because of the location of FPTA No. 1, a site closure document was submitted to the GA EPD in August 1991. Any contaminant plume emanating from FPTA No. 1 would be within the boundaries of and similar to that observed for Landfill No. 2 and the JP-4 Spill Site. The final remediation for these contaminants will be associated with the other sites and any groundwater contamination will be addressed under the GBIA CAP.

Based on these aerial photos, the RFI investigations, and the fact that contamination associated with FPTA No. 1 cannot be distinguished from that of Landfill No. 2 and the JP-4 Spill Site, an addendum was submitted to the GA EPD in June 1998 recommending No Further Action.

Relative Risk

The Relative Risk for this site is not required.

Phase Status

NFA - June 1998



SITE IDENTIFICATION NUMBER: SWMU No. 06 (FT06)

SITE DESCRIPTION: Fire Protection Training Area No.2

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Waste Oils, Fuels, and Solvents

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 06 - Fire Protection Training Area No.2

Site Summary

FPTA No. 2 was located in the southeastern portion of Landfill No. 3. In the past, FPTA No. 2 was grouped together with Landfill No. 3 and the Laboratory Chemical Disposal Area to form Zone 3. FPTA No. 2 was the second of four fire protection training areas at Robins AFB and was operated from the mid 1950s through the mid 1960s. It consisted of several unlined, grade-level, open burn sites. Training exercises consisted of pouring ignitable waste chemicals and petroleum compounds on the ground and repeatedly igniting and extinguishing them until they would no longer burn. Burning of other waste products decreased in 1965 due to air quality concerns. Ultimately, air quality restrictions mandated the use of uncontaminated fuel only.

The RFI performed in 1991 defined the nature and extent of contamination associated with past waste disposal practices at Landfill No. 3, including FPTA No. 2. VOCs, SVOCs, and some metals were present in groundwater, surface water, sediment, and soil at the site. While waste disposal practices at FPTA No. 2 contributed to the contamination in the Landfill No. 3 area, separate areas of groundwater or soil contamination cannot be identified. FPTA No. 2 was combined with SWMU No. 13 and its contamination addressed as part of the remedial measures for Landfill No. 3.

The site closure document for FPTA No. 2 was submitted to the GA EPD on September 16, 1991. Any contaminant plume emanating from the site is within and similar to that observed for Landfill No. 3 and is associated with Landfill No. 3 for final remediation.

Relative Risk

The Relative Risk for this site is not required.

Phase Status

Response Complete



SITE IDENTIFICATION NUMBER: SWMU No. 07 (FT07)

SITE DESCRIPTION: Fire Protection Training Area No.3

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Waste Oils, Fuels, and Solvents

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 07 - Fire Protection Training Area No.3

Site Summary

IRP Site FT07 consists of FPTA No. 3 located east of the main runway and north of the former Strategic Air Command (SAC) alert area. FT07 was a diked, unlined pit used for fire training exercises from the early to mid-1960s until 1969. Flammable liquids including contaminated fuel, waste oils, solvents, and other ignitable chemicals were repeatedly ignited and then extinguished. After 1965, only uncontaminated JP-4 fuel was used. Surface drainage is generally eastward toward wetlands and Horse Creek. FPTA No. 3 was replaced by FPTA No. 4 (SWMU No. 8) in 1969. FPTA No. 4 was a lined concrete pit and was used from 1969 until 1986.

The groundwater contamination at this site has been incorporated into the GBIA (SWMU No. 20 and IRP Site No. OT20) RFI Phase II investigation. A Closure Document for FT07 was submitted to the GA EPD on September 30, 1993. An addendum to the RFI Report for Zone 7 was submitted to the GA EPD and approved in March 1999. In it, Robins AFB recommended that the corrective action requirements for FPTA No. 3 in the Robins AFB Hazardous Waste Facility Permit #HW-064(S) indicate No Further Action Required (NFAR). The GA EPD has agreed that this site should be closed. No further action is planned for the soils from this site.

Phase Status

NFA – Approved – April 1999



SITE IDENTIFICATION NUMBER: SWMU No. 08 (FT08)

SITE DESCRIPTION: Fire Protection Training Area No.4

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Waste Oils, Fuels, and Solvents

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 08 - Fire Protection Training Area No.4

Site Summary

IRP Site FT08 consists of FPTA No. 4 located east of the main runway and south of the 19th Air Refueling Group. Concrete and contaminated soil was removed from FPTA No. 4 in the late 1980s. FPTA No. 5 (SWMU No. 50) was constructed on the same site. Water/fuel mixture overflowing from FPTA No. 5 operations is captured and sent to an oil/water separator. The water is then sent to the Robins AFB Industrial Wastewater Treatment Plant (IWTP). Surface drainage is generally eastward toward wetlands and Horse Creek.

A Closure Document for FT08 was submitted to the GA EPD in August 1991. An addendum to the GBIA RFI Phase II investigation for Zone 7 was submitted to the GA EPD and approved in March 1999. In the addendum, Robins AFB recommended that the corrective action requirements for FPTA No. 4 in the Robins AFB Hazardous Waste Facility Permit #HW-064(S) indicate NFAR. The GA EPD has agreed that this site should be closed. No further action is planned for the soils from this site.

Phase Status

NFA – Approved – April 1999



SITE IDENTIFICATION NUMBER: SWMU No. 09 (SS09)

SITE DESCRIPTION: DDT Spill Site

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Dichloro-diphenyl-trichloroethylene DDT, Dieldrin, and Chlordane

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 09 - DDT Spill Site

Site Summary

The DDT Spill Site is located adjacent to the old Entomology Shop within the Civil Engineering complex on Robins AFB. In October 1979, 55 gallons of concentrated DDT solution leaked from a drum stored in a gravel section of the chemical storage area. The area of the spill site was subsequently covered with an asphalt pad incorporating a four-inch perimeter curb. No removal of soil from the DDT spill area or drainage pathways was reported prior to the installation of the pad.

Several investigations were conducted at the site to assess the nature and extent of contamination resulting from the DDT spill. Chlorinated pesticides were detected in soil samples at the site and in sediment samples collected from the dry drainageway adjacent to the site and the unnamed stream that receives drainage from this area. The most prevalent compounds were DDD, DDE, DDT, Dieldrin, and Chlordane. No pesticides were detected in surface water samples. Groundwater samples collected in February 1987 from three monitoring wells at the site showed detections of Lindane at low concentrations in all three wells.

Before excavation of the site could begin, two metal building structures were decontaminated using a high pressure/low volume water triple rinse procedure. By June 1991, the buildings were removed from the site. Contaminated soil removal at the site began in November 1991. Verification samples were taken in accordance with the post-excavation sampling plan based on the approved contaminant specific cleanup criteria. After confirmation that all contamination, above the soil cleanup levels, had been removed from the site, the excavation area was backfilled with clay. A layer of topsoil was placed over the drainageway and then grassed. The excavated portion of the parking area was paved with asphalt.

A closure document submitted to the GA EPD in September 1992 documented the results of the cleanup actions. The GA EPD concurred with the No Further Action (NFA) recommendation on January 10, 1996, after some additional investigation of the site adequately addressed their comments related to the original closure document. However, the GA EPD also requested that monitoring well DDT-1 continue to be monitored for metals and pesticides analyses. The 2000 Basewide Sampling will be the fifth year that the well has been sampled after the GA EPD's request for monitoring. Recent results of the annual monitoring indicate concentrations are below drinking water MCLs. If the 2000 Basewide Sampling results indicate the well is clean again, then Robins AFB will request that the monitoring be discontinued and the monitoring wells be abandoned.

Phase Status

NFA – Approved – January 10, 1996



SITE IDENTIFICATION NUMBER: SWMU No. 10A (SS10)

SITE DESCRIPTION: JP4 Spill Site A

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Benzene, Toluene, Ethylbenzene, and Xylene BTEX

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 10A - JP4 Spill Site A

Site Summary

SWMU No. 10A is referred to as IRP Site SS10 in the IRP. SWMU No. 10A, also known as the JP4 Spill Site A, is located to the immediate west of LF02. The primary COCs at this site are BTEX.

Corrective measures have been implemented in two phases in accordance with the CAP. A Free Product Recovery System (FPRS) was installed in 1996 as an interim measure. The FPRS consists of five extraction wells equipped with sorbent wicks to remove floating free-product. Operation of the FPRS was discontinued (with GA EPD concurrence) in 1999, due to the absence of product. A full-scale bioventing system was installed in December 1997 to enhance bioremediation of the petroleum contamination in the vadose zone. Twelve air injection wells were installed as part of this system. The objective of the bioventing system is to reduce BTEX concentrations to below 0.005 milligrams per kilogram (mg/kg). Soil sampling is being performed on an annual basis to monitor system performance, and shows a reduction in the level of contamination at this site. A progress report submitted to the GA EPD in January 2000 summarized these results and reported on system operation. Since corrective measures are in place to address soil contamination, no further soil sampling was necessary in this SWMU during the GBIA RFI Phase II investigation. Some sampling is necessary for groundwater beneath this SWMU to delineate the extent of contamination emanating from upgradient source areas in the GBIA (Site OT20).

The Final CAP for this site, submitted in May 1997, was tentatively approved by the GA EPD on July 7, 1997. Final approval was provided in GA EPD correspondence dated September 30, 1997.

Relative Risk

The relative risk for this site has been evaluated as part of IRP site OT41 (SWMU 57), which is a high relative risk.

Phase Status

RA – O



SITE IDENTIFICATION NUMBER: SWMU No. 10B (SS40)

SITE DESCRIPTION: JP4 Spill Site B

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Benzene, Toluene, Ethylbenzene, and Xylene

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 10B - JP4 Spill Site B

Site Summary

This area is around monitoring well RB20MW6 and RB20MW6D, located near a wastewater/stormwater sewer line between Buildings 190 and 150 and four other SWMUs included in the BIA. RB20MW6 is also about 300 feet west of former Base Water Supply Well No. 3, now abandoned, and about 150 feet east of Building 181. The three buildings and the groundwater monitoring wells are located near the intersection of Robins Parkway and First Street. Building 150 is currently used as a battery maintenance and hydrostatic shop. The hydrostatic shop performs repair maintenance and recharge of compressed gas cylinders. Building 150 was reportedly constructed in 1944, and was originally used as an “aircraft repair” shop until around 1963. A lift station facility for two IWTP lines, one for general industrial waste and one for battery waste, is located adjacent to Building 150. Building 190 is currently used as a maintenance and repair shop for large vehicles, such as fuel tanker trucks. Two oil-water separators are located at Building 190. Building 190 appears to be of much more modern, corrugated metal construction, as compared to the older, brick-type construction of Building 150. Building 190 was reportedly constructed in 1963 and was originally used as a “vehicle maintenance” and “refueling” station.

In their Draft Final RFI Report (May 1992), Engineering Science noted that soil samples collected during the installation of RB20MW6 and RB20MW6D contained high levels of TCE, PCE, BTEX compounds, and some PAHs. Analysis of groundwater samples collected from RB20MW6 during subsequent Basewide Sampling events continue to have high concentrations of 1,2-dichlorobenzene, TCE, benzene, ethylbenzene, toluene, naphthalene, trichlorobenzene, and dichlorobenzene isomers. TCE has also been detected in RB20MW6D.

The extent of the free product and the extent of soil and groundwater contamination in the source area have been fully delineated. Additional soil and groundwater sampling was conducted as part of the GBIA RFI Phase II investigation to address data deficiencies in this area.

Relative Risk

The relative risk for this site has been evaluated as part of IRP site SS40 (SWMU 10B and SWMU 55), which is a high relative risk. This is because of the groundwater media (CHF = Significant, Migration Pathway Factor = Evident and Receptor Factor = Potential). The project will intercept the groundwater flow toward the wetlands at the Robins AFB boundary resulting in a confined MPF. This will drop the SS040 rating from high to medium.

Phase Status

The GBIA RFI Phase II is scheduled for approval by the GA EPD in the summer of 2000. The Corrective Action Plan for this site has been awarded to URS for completion.



SITE IDENTIFICATION NUMBER: SWMU No. 11 (SS11)

SITE DESCRIPTION: PCB Spill Site

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: PCBs

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 11 - PCB Spill Site

Site Summary

The Polychlorinated Biphenyl (PCB) Spill Site is located within the electrical substation on Milledgeville Street. In November 1984, a small amount of PCB contaminated solvent was reportedly spilled inside the substation.

Because of the drainage characteristics of the area, there was a high potential for contaminants to be transported by surface runoff outside the restricted area. Due to the low mobility of PCBs in soil, a reduction in the contamination potential was achieved by the removal of soils at the source, including nearby contaminated soil, where possible. Based on existing conditions within the substation, no further excavation outside the original scope was or could be accomplished.

The excavated areas were backfilled with clay. The area outside the fence was grassed and the area inside the substation's fenced boundary received a gravel cover.

With this removal action, the PCB contamination was removed from the site. A Closure Document recommending closure for this site was submitted to the GA EPD in June 1991. After Robins AFB adequately addressed the GA EPD comments on the closure document, the GA EPD concurred in January 1996 that NFA was currently required. Further investigation to fully characterize the extent of contamination may be required if the substation's present status changes. Robins AFB will address potential groundwater contamination at this site as part of the GBIA CAP.

Phase Status

NFA –Approved – January 1996



SITE IDENTIFICATION NUMBER: SWMU No. 12 (WP12)

SITE DESCRIPTION: Hazardous Waste Disposal Site

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: DDT with Pyrethrin, Mercury, and PCBs

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 12 - Hazardous Waste Disposal Site

Site Summary

This site is located slightly south and east of the RW15 – Low Level Radioactive Disposal Area site, near the Base's Small Arms Range on the southern part of the Base. WP12 was used for the burial of hazardous substances between January 1976 and April 1977. In January 1976, approximately 240 12-ounce cans of DDT containing Pyrethrin were buried at this site. Records show these materials were sealed in plastic bags and placed in three vertical sections of concrete pipe approximately 30 inches in diameter and 48 inches long. In April 1976, a fourth section of concrete pipe was buried containing two bags of mercury-contaminated material and one package holding an unknown amount of PCB material. In April 1977, a fifth section of concrete pipe was buried containing approximately 15 gallons of mercury contaminated waste. The pipes were capped at each end with concrete, covered with soil, and buried in a trench approximately 10 feet by 20 feet. The COCs at the Hazardous Waste Disposal Site are DDT, mercury, and PCBs.

The interim measures for the site were performed in accordance with the Robins AFB's Hazardous Waste Facility Permit No. HW-064(S) Section IV E. The interim measures focused on the removal of the source and the surrounding contaminated soils. The site was remediated to background concentration levels for the COCs. Further investigations performed at WP-12 demonstrated that the surface water, surface soils, and subsurface soils were not contaminated. The groundwater contamination in the area cannot be attributed to WP-12. The COCs in the groundwater are TCE and monochlorobenzene, neither of which was disposed of at this site. The source of the contamination is being investigated as part of the IRP site DC34 RFI.

On July 12, 1996, the GA EPD tentatively agreed that NFA would be required at WP-12. Robins AFB responses to the GA EPD comments on the closure document were submitted to the GA EPD on August 23, 1996. The state approved closure of the site, pending the public comment period, in a letter dated November 15, 1996.

Relative Risk

The Relative Risk for the WP12 site is rated as Low. This is because the source material and all detectable contaminated soil has been removed.

Phase Status

NFA



SITE IDENTIFICATION NUMBER: SWMU No. 13 (WP13)

SITE DESCRIPTION: Laboratory Chemical Disposal Area

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Off Specification Lab Chemicals

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 13 - Laboratory Chemical Disposal Area

Site Summary

Information obtained during the IRP Records Search indicated the Laboratory Chemical Disposal Area was located in the vicinity of Landfill No. 3 and FPTA No. 2 in the southeastern portion of Robins AFB. These three sites were collectively designated as Zone 3 in the past. Between 1962 and 1964, chemicals used in base laboratory facilities were reportedly buried in two unlined pits at the disposal area. FPTA No. 2 was the second of four fire protection training areas at Robins AFB and was operated from the mid 1950's through the mid 1960's. It consisted of several unlined, grade-level, open burn sites. Training exercises consisted of pouring ignitable waste chemicals and petroleum compounds on the ground and repeatedly igniting and extinguishing them until they would no longer burn. Burning of other waste products decreased in 1965 due to air quality concerns. Ultimately, air quality restrictions mandated the use of uncontaminated fuel only.

The RFI performed in 1991 defined the nature and extent of contamination associated with past waste disposal practices at Landfill No. 3, including WP13. Geophysical surveys were conducted to identify disposal site boundaries. An electromagnetic survey did not identify a separate Laboratory Chemical Disposal Area outside of Landfill No. 3, but several cells were located within the landfill.

The site closure document for Laboratory Chemical Disposal Area was submitted to the GA EPD in August 1991. Attempts made during the investigation of Landfill No. 3 area have not indicated a separate site and the disposal area is believed to have been within Landfill No. 3. Known contamination present as the result of previous waste disposal practices was addressed as part of the remedial measures for Landfill No. 3.

Relative Risk

The Relative Risk for this site was evaluated as part of IRP site LF03 (SWMU 3), which is a high relative risk.

Phase Status

Response Completed



SITE IDENTIFICATION NUMBER: SWMU No. 14 (WP14)

SITE DESCRIPTION: Sludge Lagoon

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

**CONTAMINANTS PRESENT OR SUSPECTED: Industrial Liquid
Waste/Sludge from the Industrial Water Treatment Plant**

REGULATORY MECHANISM: CERCLA – US EPA

SWMU No. 14 - Sludge Lagoon

Site Summary

The Sludge Lagoon (SWMU No. 14) was a 1.5-acre lagoon located on the northern boundary of Landfill No. 4 which is in the central portion of Robins AFB and adjacent to a bluff that forms the western boundary of the Ocmulgee River flood plain. The flood plain extends about one to two miles eastward to the river. Surface water in the area drains generally from west to east into the Ocmulgee River flood plain. SWMU No. 14 was constructed on the northern boundary of Landfill No. 4 by excavating soils and building earthen dikes.

SWMU No. 14 was reportedly operated from 1962 until 1978 for the disposal of industrial wastewater treatment plant sludge and other liquid wastes. When closed, it was covered with a clayey sand fill approximately five feet thick. The COCs are carbon tetrachloride, 1,2-dichloroethene, PCE, vinyl chloride, arsenic, cadmium, chromium, and lead. In 1982, Robins AFB conducted a basewide survey to identify and assess past hazardous waste disposal practices. SWMU No. 14, with Landfill No. 4, was considered to have the highest potential for migration of hazardous substances and as a result was placed on the CERCLA NPL by the US EPA in 1987. In accordance with the NCP, CERCLA, and Superfund guidance and policy, Robins AFB entered into a FFA with the US EPA and the GA EPD in June of 1989. Landfill No. 4 is also included in the NPL Site.

In 1990, the FFA party members divided the NPL site into three phases called OUs. OU1 is directed at the known sources of contamination and associated remedial actions for reducing the exposures from the known sources of contamination. OU2 was directed at the wetlands area that may have been impacted by the known sources of contamination in OU1. OU3 was directed at the groundwater beneath and adjacent to Landfill No. 4 that may have been impacted by the known sources of contamination in OU1. IRODs for OU1, OU2, and OU3 were approved in June 1991, February 1994, and August 1995, respectively.

Relative Risk

The Relative Risk for the SWMU No. 14 site is rated as High. This is because the CHF for groundwater is significant and the total concentration ratio is greater than 100. This CHF, combined with a migration pathway factor of evident and a receptor factor of identified, results in the relative risk being rated as high. Once the remedial actions of the OU1 ROD and the OU3 IROD have been implemented, the relative risk should be reduced to medium because the migration pathway factor will be reduced to confined.

Phase Status

FS



SITE IDENTIFICATION NUMBER: SWMU No. 15 (RW15)

SITE DESCRIPTION: Low Level Radioactive Burial Site

ENVIRONMENTAL CONCERN: Contaminated Soil

CONTAMINANTS PRESENT OR SUSPECTED: Radioactive Materials, Volatile Compounds, and Semi-Volatiles Compounds

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 15 - Low Level Radioactive Burial Site

Site Summary

This site is located slightly north and west of the WP12 – Hazardous Waste Disposal Area site, near the Base’s Small Arms Range. In 1954, a 20 foot x 20 foot x 15 foot concrete vault was buried next to the Base small arms range. The vault was used to dispose of radium contaminated paint, paint brushes, and other painting materials from the radium painting operations on the Base. The contaminants of concern for SWMU No. 15 were radium (Ra) 226, TCE, and acetone.

The vault was excavated in November 1992 and found to contain metal drums, from 5 to 55 gallons in size and “Jerry” cans. The presence of liquid remaining in the disposal containers showed that the majority of the waste was disposed of in liquid form. When the vault was exhumed, organic solvents were found in addition to the radioactive waste, which made the site a “mixed” waste site. The contractor, not licensed to work with “mixed” waste, was demobilized. Between 1994 and 1995, a qualified contractor removed the vault and the contents of the vault. Subsequent radioactivity surveys at the site determined that some residual contamination was present in the soils to the east and west of the excavated site. A third contractor finished removing the radioactive source material in September 1996.

Following the final removal of the contaminated soil, the Base contracted with Battelle Columbus Operations to install a bioventing system on the site. The site was to be used to demonstrate the technology’s ability to remediate semi-volatile organic solvents by removing the remaining acetone contamination in the soil. Upon installation and startup of the system, however, a thorough bioventing demonstration was unable to be conducted because not enough acetone remained in the soil. The system was abandoned. Post-abandonment review of then current analytical data suggested that the acetone had naturally attenuated.

Interim measures performed at this site have focused on the removal of the contamination source and contaminated soils to the east and west of the former vault area. The remaining COCs in the groundwater are TCE and monochlorobenzene, neither of which was disposed of at this site. The source of the contamination is being investigated as part of the IRP site DC34 RFI.

Relative Risk

The Relative Risk for the SWMU No. 15 site is rated as Low. This is due to the soil contamination. The groundwater contamination at the site is not attributable to SWMU No. 15 and shall be addressed by the DC34 RFI.

Phase Status

RA Complete



SITE IDENTIFICATION NUMBER: SWMU No. 16 (OT16)

SITE DESCRIPTION: Well No.8 TCE Contamination

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: TCE

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 16 - Well No.8 TCE Contamination

Site Summary

This site is located at the northeast end of the Base at the east edge of the Joint Surveillance Target Attack Radar System (J-STARS) aircraft ramp area. SWMU No. 16 was originally investigated as a result of TCE detected in Water Supply Well No. 8 (WS-8) during a routine sampling event. Sampling events since that time have detected no TCE or other volatile compounds. Investigation of the soil has indicated no local TCE source that could have affected WS-8.

The RFI addressed soil, as well as groundwater contamination, at the site. Several Basewide Sampling events have also included WS-8. The closure document for this site was submitted to the GA EPD in December 1991. Additional investigative work in July 1995 responded to GA EPD comments on the original the closure document. Since no contaminants have been detected in area wells above Maximum Contamination Levels (MCLs) since 1990, a recommendation was submitted to the GA EPD to close SWMU No. 16 and to continue only routine drinking water quality control sampling. The GA EPD concurred with this recommendation in February 1996.

Phase Status

NFA – Approved – February 1, 1996



SITE IDENTIFICATION NUMBER: SWMU No. 17 (OT17)

SITE DESCRIPTION: TCE Contamination

ENVIRONMENTAL CONCERN: Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: TCE

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 17 - TCE Contamination

Site Summary

This site is located in the central area of the Base, near its western boundary and adjacent to GA Highway 247. OT17 was originally identified as a SWMU because TCE was detected in drinking water supply well No. 14 (WS-14). The IRP site name was originally Well No. 14, TCE Contamination. Later it was determined that WS-14 was a receptor of TCE contamination that originated near the northwest corner of Building 645. The name of the site was changed to the Building 645 Site.

The COCs are mainly TCE, PCE, and cis-1, 2 dichloroethene (DCE). The maximum concentration of TCE detected, 100,000 parts per billion (ppb), indicates that dense non-aqueous phase liquid (DNAPL) may be present. The TCE plume with concentrations greater than five ppb (the MCL for TCE in drinking water) covers about eight acres.

A PSA for a former wastewater underground storage tank (UST) near Building 645 was submitted to the GA EPD on July 8, 1996 and approved July 25, 1996. The PSA recommended that an RFI be conducted. The RFI was performed and received final approval by the GA EPD in December 1996. WS-14 and WS-4 were abandoned during October 1996 and June 1997, respectively. These water supply wells were abandoned because they were located in the TCE groundwater contaminant plume and provided a potential pathway for contaminant migration into the Blufftown Aquifer due to their as-built construction. The Blufftown Aquifer supplies the Base with drinking water.

Geopex performed additional fieldwork during September and November 1996 to support the CAP. The draft CAP was submitted to the GA EPD during February 1997. The final CAP was approved by the GA EPD in September 1998. The remedial design for the site was completed in February 1999. With the exception of the horizontal well, CAP construction was substantially complete in May 2000. Groundwater is extracted from the unconfined and confined Upper Providence aquifers. The horizontal well and two vertical extraction wells were installed in the unconfined Upper Providence aquifer for recovery of DNAPL and contaminated groundwater. Two vertical wells were installed in the confined Upper Providence aquifer for recovery of contaminated groundwater. The groundwater is pumped to the GWTP (Building 358) for treatment and disposal. A soil vapor extraction (SVE) system (including six wells) was installed in the vicinity of the horizontal well to enhance TCE removal from the unsaturated zone and the unconfined Upper Providence aquifer. The remediation system for this site was constructed in conjunction with the remediation system for Landfill No. 3. Construction activities were started in April 1999 and were complete by May 2000, except as noted above. It is assumed that the extraction system will operate for thirty years (until 2030). Long-term monitoring will be done for five more years (until 2035) to verify that all of the contamination has been removed.

Relative Risk

The Relative Risk for the OT17 (Building 645) site is rated as high. This is because the CHF for groundwater is significant based on the total concentration ratio being greater than 100. With a migration pathway factor of evident and a receptor factor of identified, the overall relative risk is rated as high. When the remediation system has sufficiently reduced contaminant concentrations, the relative risk of the site will be reduced to medium and eventually to low.

Phase Status

RA-O



SITE IDENTIFICATION NUMBER: SWMU No. 18 (LF18)

SITE DESCRIPTION: Construction Debris Landfill, Pave Paws

ENVIRONMENTAL CONCERN: Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Construction Debris

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 18 - Construction Debris Landfill, Pave Paws

Site Summary

The site is located in a wooded area on the southeast corner of Robins AFB east of Building 1400, the PAVE PAWS facility. IRP Site LF18 was previously used for the disposal of household debris, general construction debris, tree trimmings, and wood debris and was operated from 1978 until 1987.

The RFI addressed surface water and groundwater contamination at the site. Sampling demonstrated that the landfill material was not contributing to any groundwater contamination in the area. No organic compounds were detected in any of the groundwater samples or in the ponded water on the east edge of the landfill. The closure document submitted to the GA EPD in December 1991 recommended no further action for this site. The GA EPD concurred with the recommendation after reviewing Robins AFB's responses to the GA EPD comments submitted in November 1994. Subsequently the site was closed in February 1996 with no further action required.

Phase Status

NFA – Approved – February 1, 1996



SITE IDENTIFICATION NUMBER: SWMU No. 19 (LF19)

SITE DESCRIPTION: Construction Debris Landfill

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Construction Debris

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 19 - Construction Debris Landfill

Site Summary

The Construction Debris Landfill at the north end of Robins AFB is located west of Perimeter Road adjacent to Georgia Highway 247 on the Base's northwest boundary. The site, currently being used as a yard debris landfill, opened in 1985 and ceased receiving material other than plant debris in mid-1988. Material disposed at the site included general construction debris, concrete and asphalt, metal scraps, and tree trimmings/wood debris.

An RFI was conducted at IRP Site LF19 in 1990-1991. Groundwater, surface water, soils and sediments were analyzed. The relatively low levels of metals, pesticides, and semi-volatile compounds detected in various media associated with the site do not appear to represent a release from a source, and may be representative of facility-specific background. VOCs detected in samples during this RFI are considered to be attributable to an off-base source of contamination, as shown in the results of the PSA for IRP Site SS36, an Area of Concern (AOC) near Taxiway No. 4.

Robins AFB submitted a closure document for this site in September 1994 to the GA EPD recommending NFA because the site did not appear to be a source of contamination. The GA EPD reviewed the Final RFI and determined that it was complete. They tentatively agreed in August 1996 that NFA would be required at the site pending the outcome of a public comment period for the modification of the Robins AFB Hazardous Waste Permit.

Relative Risk

The Relative Risk for this site is not required.

Phase Status

NFA - Approved - August 1996



SITE IDENTIFICATION NUMBER: SWMU No. 20 (OT20)

SITE DESCRIPTION: Greater Base Industrial Area

ENVIRONMENTAL CONCERN: Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: TCE, Solvents, Parts Cleaning Chemicals, and Other Chemicals Associated With Base Industrial Area Activities

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 20 - Greater Base Industrial Area

Site Summary

Located in the north central part of the Base, the Base Industrial Area (BIA) is comprised of four original SWMUs that are potential sources of the TCE contamination confirmed in Base Water Supply Well No. 3 (WS-3). These four SWMUs include two industrial wastewater treatment plants, a plating shop, a machine shop, and industrial storage. A RCRA Facility Investigation was performed on the site and finalized in October 1996. Data was also collected in this area as part of the Flightline Investigation conducted in 1996 and the annual Basewide Sampling events conducted at Robins AFB. However, the full extent of TCE contamination has not been delineated; therefore, an RFI Phase II is being conducted and will be finished in May 2000. In preparation for the CAP, this site has been included in the groundwater model, which has been developed for Robins AFB. Once the RFI Phase II is finished, a CAP will be developed.

Concentrations of benzene, TCE, chlorobenzene, toluene, PCE and xylenes exceed their respective MCLs in one or more groundwater monitoring wells. Investigations indicate that this site is the major source of a TCE plume spanning a large portion (over 100 acres) of Robins AFB. The OT20 groundwater plume is impacted by Landfill No. 1, Landfill No. 2, the JP-4 Spill Site, the Sanitary Sludge Placement Area, the Satellite Storage Area, and Fire Protection Training Area Nos. 1, 3, and 4, in addition to a number of AOC's. The four original SWMUs in addition to the above listed sites are referred to as the GBIA.

Robins AFB has installed an Interim Corrective Measure (ICM) for this site that includes four extraction wells in the "hot spots" of the GBIA TCE groundwater plume. "Hot Spots" are defined as areas with a concentration of TCE greater than 10,000 ppb. The system began operation in October 1997. Water extracted from these wells is treated at the OU3 GWTP and discharged to National Pollutant Discharge Elimination System (NPDES) Discharge 010.

Relative Risk

The Relative Risk for the OT20 site is rated as High. This is because of the groundwater media (CHF = Significant, Migration Pathway Factor = Evident and Receptor Factor = Potential). The soil media is ranked as low because there is limited contamination in the surface soils. Surface water/sediment (human and ecological) is ranked as medium because wetlands are located downgradient of the site and are a potential receptor for contaminated groundwater. The project will intercept the groundwater flow toward the wetlands at the Robins AFB boundary resulting in a confined MPF. This will drop the OT20 rating from high to medium.

Phase Status

RFI with Interim Corrective Action. CAP to begin in July 2000.



SITE IDENTIFICATION NUMBER: SWMU No. 21 (OT21)

SITE DESCRIPTION: Corrosion Control Facility

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: TCE

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 21 - Corrosion Control Facility

Site Summary

SWMU No. 21 is located in the northeast part of the Base near the KC-135 ramp area. Building 80 is a corrugated metal shed used for painting and stripping aircraft parts. TCE was once used for parts degreasing at this building, but this practice no longer occurs.

An RFI was conducted on IRP Site OT21 in 1990-1991. No groundwater monitoring wells were installed at the site because there was no evidence of any soil contamination.

The closure document submitted to the GA EPD in December 1991 recommended NFA for this site since no contamination was detected. To address the GA EPD comments on the closure document, a Geoprobe™ investigation was accomplished in July 1995. Soil samples were collected from two different depth zones on three sides of the stripping pad and solvent storage pad. Robins AFB also installed two temporary piezometers around the site, which were used in conjunction with three other existing monitor wells in the area to establish groundwater flow gradient. Additionally, groundwater samples were collected for analysis. The results of this sampling indicated that all volatile constituents in the groundwater were below detection limits.

With this additional information, the GA EPD was again asked to consider closure for the site because the analytical data for all soil and groundwater samples had shown no contaminant concentrations above established maximum contaminant level values. The GA EPD concurred and subsequently closed the site in February 1996 requiring NFA at this time.

Phase Status

NFA – Approved – February 1, 1996



SITE IDENTIFICATION NUMBER: SWMU No. 22 (OT22)

SITE DESCRIPTION: Satellite Storage Area SE of Building 361

ENVIRONMENTAL CONCERN: Suspected Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Polynuclear Aromatic Hydrocarbons PAHs and Construction Debris

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 22 - Satellite Storage Area SE of Building 361

Site Summary

SWMU No. 22 is located in the central area of Robins AFB south of Second Street and north of Landfill No. 4. The site consists of Building 361, an adjacent concrete pad, and the asphalt pad surrounding both areas. The complex served as Robins AFB's Central Waste Management Facility. The area around the site has been used as a storage area for telephone poles, trailers, bricks, and other construction equipment. Neither area has been, or ever will be a Satellite Storage Area, according to the definition provided in 40 CFR 262. The COCs are PAHs, in particular benzo(a)pyrene.

The site has been investigated twice under the auspices of the IRP. Engineering Science, Inc. conducted a PSA in 1989. The PSA identified data gaps in the IRP program, one of which was this Satellite Storage Area (IRP No. OT22). A second set of investigations was conducted in December of 1993 and again in March of 1994. In these investigations, EM personnel sampled the soils surrounding the site. The samples were analyzed for PAHs, total petroleum hydrocarbons (TPH), BTEX, and metals. Only two PAHs were above the Industrial Soil Preliminary Remediation Goals (PRGs) found in the Risk-Based Concentration Tables Approved by the US EPA Region IV. One of these samples was taken in the vicinity of a telephone pole that could have biased the results because of the creosote on the pole. The other sample was taken near Second Street, which could reasonably explain the levels of PAHs found there.

Robins AFB submitted the Closure Document for OT22 to the GA EPD on September 30, 1994, with the recommendation that NFA be required at the site. The GA EPD required a RFI Phase II be conducted on this site in conjunction with the GBIA RFI. The RFI Phase II is scheduled for final approval in July 2000. The RFI recommends No Further Action for soil at this site.

Relative Risk

The Relative Risk for the OT22 site is rated as Low. This is because the PRGs have been met for this site. The risk-based guidance states that if certain criteria are met, the PRGs will be accepted as no-action levels.

Phase Status

RFI was submitted in April 2000 requesting NFA. Contaminated groundwater will be addressed under a separate CAP.



SITE IDENTIFICATION NUMBER: SWMU No. 23 (OT23)

SITE DESCRIPTION: Sanitary Sludge Placement Area SE of Building 361

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Sludge from Sanitary Treatment Plant and Metals

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 23 - Sanitary Sludge Placement Area SE of Building 361

Site Summary

SWMU No. 23 is located in the central area of the Base south of Second Street, north of Landfill No. 4, and east of IRP site OT22. The COCs for OT23 are varied. In the soil, COCs consist of 14 inorganic constituents, three VOCs (toluene, TCE, xylene), and 19 semi-volatile organic compounds (16 PAH compounds, two phthalate esters, and one phenolic compound). For the groundwater, the COCs consist of seven metals and two VOCs (TCE and vinyl chloride); however, only cadmium, lead, TCE, and vinyl chloride exceeded their respective MCLs for groundwater. TCE, vinyl chloride, and lead have all been reported upgradient of the site at higher concentrations, indicating there could be sources of contamination other than OT23. Conversely, cadmium concentrations showed little difference upgradient or downgradient of OT23, which makes the site an unlikely source of this contamination.

An RFI was begun for the site in 1994. Robins AFB responded to the GA EPD's comments on the RFI on August 23, 1996. The conclusions of the RFI were that the groundwater contamination would be addressed under the GBIA RFI Phase II investigation, and the soil contamination did not pose a significant health risk. The GA EPD directed that the GBIA RFI Phase II investigation be conducted on this site in conjunction with OT20 – GBIA. The GBIA RFI Phase II recommends a CAP be performed on this site due to high levels of metals and pesticides found in the soil at this site. In addition, the OU2 BRA concluded that contaminants in the soil at this site do pose significant risk to ecological and human receptors. A CAP has been contracted for this site and will begin in July 2000.

Relative Risk

The Relative Risk for the OT23 site is rated as Medium. This is due to metal and pesticide soil contamination. The groundwater contamination in the area is being addressed as part of the GBIA.

Phase Status

RFI Complete



SITE IDENTIFICATION NUMBER: SWMU No. 24

SITE DESCRIPTION: Former Waste Solvent UST

ENVIRONMENTAL CONCERN: Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: TCE

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 24 - Former Waste Solvent UST

Site Summary

This 5,000-gallon UST was located just west of the northwest corner of Building 645. The UST served as a temporary holding tank for industrial wastewater and was periodically pumped out. The tank was plugged about 1983 when a new lift station was constructed for the industrial wastewater line. Shortly after being plugged, there were operational problems with the lift station that caused wastewater to back up into the tank. The pressure forced the plug out of the UST and wastewater overflowed the tank. The tank was later removed in February 1988. There was no sampling performed during the removal. The COC for this site is TCE.

While performing the RFI for IRP Site OT17 (SWMU No. 17), it was determined that high levels of TCE appeared to originate in the groundwater near the northwest corner of Building 645. Based on the OT17 site investigations, the release from the old UST (SWMU No. 24) could have been the source of the contamination at the site. A groundwater pump and treat system and a SVE system were constructed at the site during the period April 1999 – May 2000. The pump and treat system consists of a horizontal extraction well under the old UST location and Building 645, and four vertical extraction wells downgradient (east) of the building. The SVE system was installed near the old UST location. SWMU No. 24 and site OT17 (SWMU No. 17) are now being addressed as one site, under the site name of OT17.

Relative Risk

The Relative Risk for the OT17 (Building 645) site is rated as high. This is because the CHF for groundwater is significant based on the total concentration ratio being greater than 100. With a migration pathway factor of evident and a receptor factor of identified, the overall relative risk is rated as high. When the remediation system has sufficiently reduced contaminant concentrations, the relative risk of the site will be reduced to medium and eventually to low.

Phase Status

RA – O



SITE IDENTIFICATION NUMBER: SWMU No. 25 (OT25)

SITE DESCRIPTION: Pasture Disposal Site

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Domestic/Construction Debris

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 25 - Pasture Disposal Site

Site Summary

This SWMU is located on the southern end of the Base on the eastern boundary near the Small Arms Range. There are no potential COCs for OT25. In 1989 contractor personnel found old disposal debris outcropping from an embankment in the southeast corner of the Horse Pasture. The debris, believed to be from the 1950's or 1960's, consisted of empty cans, steel frames, and miscellaneous household materials.

In 1990, a preliminary site characterization was performed for Extraction Procedure (EP) Toxicity, US EPA Test Method 1310, with samples collected downgradient of the disposal area. The analytical results were below the maximum allowable concentrations for contaminants for all three samples. In 1992, five soil borings were taken within the disposal area. The soil samples were analyzed for the Toxicity Characteristics Contaminants using the Toxicity Characteristic Leaching Procedure (TCLP). No contaminants were detected above the RCRA waste disposal concentration limits.

Robins AFB submitted a Closure Document to the GA EPD for this site on September 30, 1992. The GA EPD approved the site for closure on November 21, 1994. NFA is required for this site.

Phase Status

NFA - Approved - November 21, 1994



SITE IDENTIFICATION NUMBER: SWMU No. 26 (OT26)

SITE DESCRIPTION: Off-Base Drum Disposal Site

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Empty Drums

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 26 - Off-Base Drum Disposal Site

Site Summary

IRP Site OT26 is located approximately 150 feet east of the southeast boundary of Robins AFB. The initial estimate was that 400 55-gallon drums had been discarded at the site. An inspection of the drums showed painted labels indicating they had at one time been in the U.S. military supply system. It was not possible to determine if the drums had been empty when they were discarded. The site was overgrown with trees and vegetation. The drums were in various stages of decomposition.

A decision document submitted in April 1991 documented the results of the site investigation and removal efforts. There were no visual indications of contamination. Nine drums contained enough residual material for samples to be collected and analyzed. Of these drums, seven contained bunker oil, one contained 95 percent water with 3 percent bunker oil and 2 percent iron oxide (rust), and the remaining drum had dried paint residue. In April 1989, four soil samples and one sample of standing water in a drum were analyzed for metals and organics. Chromium was found in one soil sample, while lead and zinc were found in all soil samples. These results were deemed consistent with conditions in the vicinity of the rusting metal drums.

The drums were removed by contract and disposed of in the Houston County Landfill during the July to October 1989 timeframe. The total number of drums removed was 1200. The site has been cleaned-up and a closure document was submitted to the GA EPD. The GA EPD concurred with the closure recommendation in documentation dated May 24, 1991.

Phase Status

NFA - Approved - May 24, 1991



SITE IDENTIFICATION NUMBER: SWMU No. 27 (OT27)

SITE DESCRIPTION: Gas Line Road Dump Site

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Empty Drums

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 27 - Gas Line Road Dump Site

Site Summary

IRP Site OT27 is located approximately 800 feet east of Hannah Road and adjacent to the right-of-way for the underground natural gas line. The area contained old tires, metal pieces, empty paint cans, and similar debris. The material had apparently been disposed of from the edge of the gas line right-of-way.

A decision document submitted in April 1991 documented the results of the site investigation and removal efforts. There were no visual indications of contamination. None of the paint cans contained liquid although some contained hardened paint. Soil samples taken before and after removal of the debris were analyzed for organic materials, chromium, cadmium, lead, and zinc. The results were deemed consistent with levels anticipated with a site where metal drums and other metal debris had been deteriorating for a number of years.

The debris was removed by contract and disposed of in the Houston County Landfill in the July to October 1989 timeframe. A total of 101 empty drums and approximately 50 tons of debris were removed from the site. The site has been cleaned-up and a closure document was submitted to the GA EPD. The GA EPD concurred with the closure recommendation in documentation dated May 24, 1991.

Phase Status

NFA - Approved - May 24, 1991



SITE IDENTIFICATION NUMBER: SWMU No. 28

SITE DESCRIPTION: Purge Fluid Leak

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Purge Fluid, Jet Fuel JP-4

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 28 - Purge Fluid Leak

Site Summary

SWMU No. 28 is located near Building 45 at the north edge of the main ramp area on the west side of the airfield. In February 1990, soil contamination was discovered near Valve Cluster No. 2 on the fuel purging system. The cause of the release appeared to be related to mechanical problems with the valves. At the time of the release, all piping and valves were buried below surface grade. In 1996, the system of underground lines was subsequently replaced with an aboveground fuel purging system.

A PSA for the release was submitted to the GA EPD in March 1992. Subsequently, the purge fluid leak site was listed on Robins AFB Hazardous Waste Facility Permit No. HW-064(S) as a site warranting investigation. The GA EPD responded in May 1995 and concurred with Robins AFB's recommendation that an RFI should be performed at this site. The RFI, conducted between January and March 1997, included soil and groundwater samples collected from Geoprobe™ borings, new groundwater monitoring wells, free-product thickness measurements, and installation of four 4-inch recovery wells at the site. Three distinct areas of free-product and associated dissolved phase groundwater contamination plumes were identified at Valve Clusters Nos. 2 and 3 and the main operations area. In the operations area, adjacent to the purge fluid aboveground storage tanks, up to three feet (apparent thickness) of petroleum product (free-product) was measured in one of the recovery wells.

The RFI report was submitted to the GA EPD which responded in October 1997, concurring with Robins AFB's recommendation that interim corrective measures be conducted and that further investigation be performed at the site. In March 1998, four passive (canister) and four active (belt skimmer) free-product recovery units were installed and commenced operations. This recovery system has recovered approximately 705 gallons of purge fluid in the first year of operation.

The Phase II RFI, performed between July 1998 and April 1999, focused on the delineation of areas of free-product and soil and groundwater contamination attributed to the purge fluid operations. Based on the data generated during the Phase II RFI, the total areal extent of the free-product encompasses approximately 0.59 acres and an estimated 43,847 gallons of purge fluid (and Jet Fuel) which remain in the subsurface at this site. This contamination is present as free-product (21,008 gallons) floating on the water table, residual product in the smear zone above and below the water table (21,339 gallons), and dissolved phase contamination in the groundwater (1,500 gallons). The vertical extent of the groundwater contamination is limited to the upper 10-15 feet of the surficial aquifer.

The free-product and dissolved phase plumes do not appear to be significantly mobile. Purge fluid, which is used to remove volatile components of jet fuel from aircraft fuel systems, has, by design, the characteristics of low volatility and low solubility and does not contain appreciable quantities of volatile (and more mobile) compounds. The dissolved phase contaminant plumes have moved less than 400 feet from the source areas to date. This is significantly less than

anticipated based on more traditional petroleum contaminant transport calculations. Initial data also indicate natural attenuation is probably occurring at this site.

The Revised Phase II RFI report for SWMU No. 28, will be submitted to the GA EPD in September 2000, recommends that the interim measures system continue to operate with monitoring for free-product removal effectiveness. The revised report will also contain a human health risk assessment with a Remediation Level (RL) calculated which will define the clean up level. The report also recommends that alternative technologies such as dual phase extraction, skimmer pumps, total fluids pumping, and bioslurping be evaluated for applicability to enhance free-product removal at this site. Also recommended was further delineation of surficial soil contamination and additional groundwater monitoring for parameters indicative of natural attenuation. Based on the data developed from the RFIs and subsequent investigative activities, a CAP will be prepared to address remediation of the soil and groundwater, as necessary.

Phase Status

RFI with Interim Corrective Measures



SITE IDENTIFICATION NUMBER: SWMU No. 29 (OT29)

SITE DESCRIPTION: Duck Lake

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

**CONTAMINANTS PRESENT OR SUSPECTED: DDT-R, Dieldrin,
Chlordane, and PCB**

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 29 - Duck Lake

Site Summary

SWMU No. 29 is located in the central part of the Base just southwest of the Base golf course. Investigation of Duck Lake began as part of the DDT Spill Site investigation (SWMU No. 9). Erosion of contaminated soil from the spill site and surrounding areas led to their transport through surface drainage pathways and final deposition in Duck Lake. The site consists of Duck Lake and the intermediate unnamed stream leading from the railroad ditch to the lake. Four main COCs are DDT-R (which includes DDT, DDD, DDE), dieldrin, chlordane, and PCB.

The RFI addressed data gaps that existed in groundwater interaction with the lake surface water and possible groundwater contamination at the site. These data gaps were addressed in response to the GA EPD requirement for additional information before the RFI was Approved as complete. The final RFI report was submitted in August 1996 for GA EPD approval.

The appropriate alternative to address the contamination at the site as delineated in the CAP, was submitted in February 1997. The remedial action included the eradication of the existing fishery, construction of sediment control measures in the Duck Lake watershed, sediment excavation and proper disposal, lake restoration, and establishment of a monitoring plan for incoming sediment. The first component was performed as an ICM in June 1996. The other RAs were completed on September 21, 1998 with the final report submitted to the GA EPD in the spring of 1999.

Relative Risk

The Relative Risk for the SWMU No. 29 (Duck Lake) site was rated as High. This was because of the potential surface sediment exposure to both human and ecological receptors. Contaminated sediment from the DDT Spill Site, along with runoff from the golf course and surrounding housing areas, were transported through drainage pathways and final deposition in Duck Lake. Receptors included Base personnel, housing residents, and wildlife. Possible exposures could have resulted from dermal contact during recreational and casual activities, from inhalation of air borne particulate during low water level periods, and from ingestion of fish, soil, or plants. The remedial action project addressed the sediment contamination by removing and properly disposing of the affected media. This removed the source of potential exposure/risk, so Relative Risk is no longer being evaluated.

Phase Status

Remedial Phase - The Remedial Action is in Place as of September 21, 1998
Remedial Action Operation from March 1999 until September 2003
Site Closeout September 2008



SITE IDENTIFICATION NUMBER: SWMU No. 30

SITE DESCRIPTION: DRMO Operating Container Storage Building

ENVIRONMENTAL CONCERN: N/A

CONTAMINANTS PRESENT OR SUSPECTED: N/A

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 30 - DRMO Operating Container Storage Building

Site Summary

This is currently an active site at Robins AFB and is not involved in any environmental restoration/remediation activities.

Phase Status

Currently Operating Hazardous Waste Management Unit (HWMU); NFA



SITE IDENTIFICATION NUMBER: SWMU No. 31

SITE DESCRIPTION: Operating Container Storage Building

ENVIRONMENTAL CONCERN: N/A

CONTAMINANTS PRESENT OR SUSPECTED: N/A

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 31 - Operating Container Storage Building

Site Summary

This site is currently an active facility on Robins AFB and is not involved in any environmental restoration/remediation activities.

Phase Status

Currently Operating HWMU; NFA



SITE IDENTIFICATION NUMBER: SWMU No. 32

SITE DESCRIPTION: Dioxin Container Storage Building

ENVIRONMENTAL CONCERN: Items Contaminated with Dioxin

CONTAMINANTS PRESENT OR SUSPECTED: Dioxin

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 32 - Dioxin Container Storage Building

Site Summary

This was an active HWMU. The notification of closure was submitted and approved by the GA EPD on January 18, 1995.

Phase Status

NFA Approved - January 1995



SITE IDENTIFICATION NUMBER: SWMU No. 33 (AOC1)

SITE DESCRIPTION: SAC Drum Site

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Drums

REGULATORY MECHANISM: RCRA/UST – GA EPD

SWMU No. 33 - SAC Drum Site

Site Summary

During November 1990, several 55-gallon drums were located in two wooded wetland areas along the eastern edge of the former SAC area of Robins AFB. Most of the drums were found lying on their side, contained rusted holes, and appeared to have been in that location for several years. Soil samples were taken immediately adjacent to the drums during March 1992. Analytical results were all below the RCRA action levels.

A PSA Report was submitted to the GA EPD on July 22, 1996 and recommended NFA. The GA EPD concurred with the recommendation for NFA in a letter dated July 25, 1996.

Phase Status

NFA - Approved - July 25, 1996



SITE IDENTIFICATION NUMBER: SWMU No. 34 (AOC3)

SITE DESCRIPTION: Fire Fighting Foam Lagoon

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 34 - Fire Fighting Foam Lagoon

Site Summary

The Aqueous Fire Fighting Foam (AFFF) holding lagoon was constructed along with Buildings 131 and 137 in 1982 in the northwest part of the BIA. The AFFF lagoon was cited as an AOC by the GA EPD RCRA inspectors during the September 1993 RCRA inspection. The GA EPD suspected hazardous waste had been dumped into the AFFF lagoon based on the lagoon's poor appearance during the inspection.

A letter dated April 12, 1994, was sent to the GA EPD requesting clarification and interpretation on whether AFFF material is considered a solid waste requiring a solid waste-handling permit. A letter from the GA EPD dated June 30, 1994, was received and stated that AFFF is considered to be a solid waste as defined by the Rules for Solid Waste Management, 391-3-4-01(65). The GA EPD requested that Robins AFB submit a Notification of Permit by Rule Operations form for the AFFF lagoon, which Robins AFB submitted on July 19, 1994. The GA EPD Approved Robins AFB's March 4, 1994, response to a notice of violation as a PSA for this site issued a NFA decision in a letter dated June 20, 1996.

Phase Status

NFA - Approved - June 20, 1996



SITE IDENTIFICATION NUMBER: SWMU No. 35

SITE DESCRIPTION: Methyl Ethyl Ketone Unit

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Methyl Ethyl Ketone

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 35 - Methyl Ethyl Ketone Unit

Site Summary

This SWMU is located on the southern part of Robins AFB adjacent to Georgia Highway 247. Building 680 is a support building for the maintenance operations performed in Building 670. The building was constructed in 1984 and has always been used as a depaint facility. In the past, methyl ethyl ketone (MEK) was the primary solvent used in depainting the aircraft parts. Subsequent solvents used at the facility contained MEK, toluene, and methylene chloride. To support this process, a 110-gallon concrete UST was located at the western end of the building and was used to accumulate and store the used solvents. The use of the tank was discontinued in April 1995 and the UST pit area was excavated in February 1996 and contaminated soil (identified by a strong solvent odor) was found to be present. The UST pit area plus 15 cubic yards of soil were excavated and site backfilled with clean soil.

MEK and toluene were discovered in the soil and groundwater at SWMU No. 35 in 1995. Subsequent investigations detected the contaminants in soil in close proximity to the MEK tank pit and in the perched groundwater aquifer, at approximately 28 feet below land surface.

A PSA review of the data collected during the removal of the MEK tank in February 1996 concluded that an RFI should be conducted. During a combined RFI for SWMU Nos. 35, 51, and 52 conducted in June 1997, 15 soil borings, four perched aquifer groundwater monitoring wells and three Upper Providence aquifer groundwater monitoring wells were installed. While the majority of the test results indicated contamination below the detection limit, soil and groundwater samples from areas adjacent to the former tank pit showed relatively high concentrations of MEK and toluene.

A Revised Phase II RFI Report will be submitted in December 2000. The revised report will also contain a human health risk assessment with a Remediation Level (RL) calculated which will define the clean up level. During the RFI, the extent of toluene, MEK, and other constituents were determined to be very localized, probably because natural attenuation appears to be occurring, limiting migration of the compounds. Limited toluene appears to be moving off-site to the south and down to the Upper Providence aquifer; however, these concentrations are below MCLs.

Based on findings of the Phase II RFI, no COCs were identified in the surface soils at SWMU No. 35 and arsenic was the only contaminant identified above screening levels in subsurface soil. Two VOCs in the site groundwater (methylene chloride, and toluene) appeared only in the perched aquifer and no VOCs were identified above screening levels in the Upper Providence aquifer. Chromium occurred above the screening levels only in the Upper Providence aquifer, while arsenic occurred in both aquifers, however, high turbidity in each of the associated samples may have caused artificially high concentrations of the metals.

A groundwater extraction well was installed in June 1998 and a recovery system was subsequently installed at the well and commenced operations in January 1999. The system is

producing about 12 gallons per day; however, no further information is currently available on the concentrations of constituents in the recovered water or the long-term effect of the recovery on the contaminant plume at SWMU No. 35.

The Revised Phase II RFI report for SWMU No. 35, will be submitted to the GA EPD in December 2000, and will recommend that the interim measures system continue to operate with monitoring to determine the effect of the system on the contaminated groundwater. Groundwater monitoring for parameters indicative of natural attenuation was also recommended. Based on the data developed from the RFIs and subsequent investigative activities, a CAP will be prepared to address remediation of the soil and groundwater at SWMU No. 35, as necessary.

Phase Status

RFI with Interim Corrective Measures



SITE IDENTIFICATION NUMBER: SWMU No. 36 (DC34)

SITE DESCRIPTION: Horse Pasture Trench Disposal Sites

ENVIRONMENTAL CONCERN: Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Solvents

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 36 - Horse Pasture Trench Disposal Sites

Site Summary

This SWMU is located southeast of Robins AFB's Small Arms Range. IRP Site DC34 was identified as a potential source of contamination as a result of a 1996 PSA. Three individual SWMUs were identified as making up DC34 and a RFI was recommended. Included under the DC34 investigation were (1) SWMU No. 36, Horse Pasture Trench Disposal Site; (2) SWMU No. 48, Miscellaneous Disposal Sites; and (3) SWMU No. 49 Horse Pasture West of Site RW15. The RFI began in November 1997 based on a work plan approved by the GA EPD in October 1997. Field work supporting the RFI is complete and report preparation is ongoing. The report is scheduled to be finalized by the consultant, Geophex, Ltd., reviewed by Robins AFB Environmental Management and accepted by the GA EPD by September of 2000.

The focus of the investigation was to be the suspected groundwater contamination impacting RW15 Low Level Radioactive Burial Site and the numerous metallic anomalies detected with Ground Penetrating Radar. However, analysis of the groundwater samples obtained during the first phase of monitor well installation and sampling during the RFI, indicated VOC contamination at the Robins AFB boundary. Contaminated groundwater was, apparently, moving off the Base. Delineating the possible contamination moving off the reservation became an additional goal of the RFI. A greatly expanded scope of well construction was determined to be necessary and those wells were installed during the spring and summer of 1999. Three of the wells were to be placed on private land used for timber cultivation outside the Robins AFB boundary to definitively delineate the horizontal extent of contamination from the migrating groundwater.

Relative Risk

The Relative Risk for the DC34 site is rated as High. This is related to groundwater, surface water, soil, and sediment contamination. The source (or sources) of the contamination is presently unknown but is being evaluated as part of the RFI report.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 37 (OT20)

SITE DESCRIPTION: Solvent Reclamation Area

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Solvents

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 37 - Solvent Reclamation Area

Site Summary

SWMU No. 37 consists of Building 181 and the immediate surrounding area located in the center of the BIA. From the early 1980s to the mid 1990s, this building housed five solvent recovery stills in Cell 8 for 1,1,1-trichloroethane, TCE, MEK (or 2-butanone), freon, paint thinners, PD-680, and isopropyl alcohol. In 1997, these stills were relocated to Building 359. From 1981 to 1984, drummed wastes were sent to Building 181 for temporary storage before being sent to the DRMO. If the drums contained less than one-inch of liquid, the liquid fraction would be poured down the floor drain in Cell 8. If any drums were ruptured, they were rinsed with water and the entire drummed contents poured down the floor drain. It is believed that this drain may be connected to the 60-inch storm sewer that discharges at Stormwater Outfall 009. Another source area, possibly associated with Building 181, is the grated drain in the parking lot west of Cell 9 between Buildings 180 and 181. This storm drain is in close proximity to an area where large quantities of TCE (and possibly other solvents) were spilled. It is possible that solvents were discharged into the storm drain via this grate.

This site has been fully evaluated under the GBIA RFI Phase II.

Relative Risk

The Relative Risk for this SWMU has been evaluated as part of IRP Site OT-20, which is a High relative risk.

Phase Status

RFI scheduled for approval in July 2000 and CAP to begin in July also.



SITE IDENTIFICATION NUMBER: SWMU No. 38 (OT20)

SITE DESCRIPTION: Industrial Waste Treatment Plant Nos. 1 & 2

ENVIRONMENTAL CONCERN: Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Industrial Wastewater

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 38 - Industrial Waste Treatment Plant Nos. 1 & 2

Site Summary

SWMU No. 38 (Building 141), located in the center of the BIA, serves the two IWTP, Nos. 1 and 2. IWTP No. 1 treats wastes from various industrial shops and oil/water separators around Robins AFB. IWTP No. 2 treats electroplating wastes from Building 142 exclusively. Earth Tech/Rust E&I performed a detailed investigation of the integrity of the process wastewater piping and conveyances in the BIA. Numerous breaks, cracks, punctures or missing sections were noted in the process wastewater piping which were repaired as part of the investigation. However, based on the findings of this study, it is suspected that these piping defects may have been a potential source of contamination in the BIA.

This site has been fully evaluated under the GBIA RFI Phase II. Groundwater will be addressed under OT020.

Relative Risk

The Relative Risk for this SWMU has been evaluated as part of IRP Site OT20, which is a High relative risk.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 39 (OT20)

SITE DESCRIPTION: Metal Finishing Shop

ENVIRONMENTAL CONCERN: Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Electroplating Wastes

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 39 - Metal Finishing Shop

Site Summary

Located in the center of the BIA, SWMU No. 39 consists of Building 142 which houses equipment for electroplating aluminum, titanium, and steel aircraft parts with gold, silver, copper, cadmium, chromium, tin, and nickel. Wastes from the plating processes are discharged to the industrial wastewater line leading to Building 141 (IWTP No. 2). Chlorinated solvents were detected in soil samples collected along the north end of the building during renovation work. TCE has also been detected in monitoring well RB20MW17 downgradient of this building at concentrations ranging from 480 µg/l to 3,000 µg/l. A portion of the process wastewater generated in this building is conveyed to IWTP No. 1 via the industrial sewer. Earth Tech/Rust E&I previously noted some defects in the process wastewater piping. While the piping defects have been corrected, it is possible that the piping defects may have been a potential source of contamination in the BIA.

This site has been fully evaluated under the GBIA RFI Phase II. Conclusions from the RFI indicate a small chromium groundwater plume originating in the area of B142.

Relative Risk

The Relative Risk for this SWMU has been evaluated as part of IRP Site OT20, which is a High relative risk.

Phase Status

RFI to be approved July 2000. CAP scheduled to begin in July 2000.



SITE IDENTIFICATION NUMBER: SWMU No. 40 (OT20)

SITE DESCRIPTION: Machine Shop

ENVIRONMENTAL CONCERN: Groundwater Contamination

**CONTAMINANTS PRESENT OR SUSPECTED: Electroplating Wastes,
Solvents, and Paints**

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 40 - Machine Shop

Site Summary

Located in the center of the BIA, SWMU No. 40 consists of Building 140 which was constructed in the area where two electrodeless nickel-plating shops were operated in the 1940s. Wastes from these plating shops were reportedly dumped in the area now occupied by an asphalt lot at the western end of Building 140. The building currently houses equipment for the machining and tooling of metallic aircraft parts. At this time, the prop and turret shops in the western end of the building use a variety of hazardous materials including acetone, MEK, TCE, PD-680, polyurethane-based paints, lacquers, paint thinners, hydraulic fluids, sealants, coolants, and cutting fluids. Process wastewater generated in this building is conveyed to IWTP No.1 via the industrial sewer. Earth Tech/Rust E&I previously noted some defects in the process wastewater piping, which have been corrected. However, it is possible that the piping defects may have been a potential source of contamination in the BIA, especially since the process sewer runs parallel to a former drainage ditch between Buildings 132 and 140.

This site has been fully evaluated under the GBIA RFI Phase II. Based on the results of the investigation, development of a Baseline Risk Assessment (BRA) is recommended for SWMU 40 soil. As part of the BRA additional samples will be collected beneath Building 140 to assess potential soil contamination. The remediation of the groundwater plume will be addressed as part of OT020.

Relative Risk

The Relative Risk for this SWMU has been evaluated as part of IRP Site OT20, which is a High relative risk.

Phase Status

RFI to be approved July 2000. BRA scheduled to begin July 2000.



SITE IDENTIFICATION NUMBER: SWMU No. 41

SITE DESCRIPTION: Civil Engineer Pole Yard and Transformer Storage Yard

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: PCB

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 41 - Civil Engineer Pole Yard and Transformer Storage Yard

Site Summary

This area consists of an asphalt-paved lot, constructed in 1984, which was used to store telephone/utility poles and power transformers. The lot is surrounded by a steel mesh fence with a locking gate.

Prior to the PSA, the transformers were tested for PCBs and those that contained over 50 parts per million (ppm) were moved to a new PCB storage area. There was no history of any spillage or mishaps nor was there any visible evidence of either observed in the area.

Because the facility was relatively new and the lack of evidence of any spills, the site was recommended for NFA in the PSA Confirmatory Sampling Report dated January 10, 1997. The GA EPD concurred with the recommendation in a letter dated July 1, 1997.

Phase Status

NFA - Approved - July 1, 1997



SITE IDENTIFICATION NUMBER: SWMU No. 42

SITE DESCRIPTION: Former Transformer Storage Site

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: PCB

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 42 - Former Transformer Storage Site

Site Summary

Building 1178 was a small storage shed (37 feet by 10 feet) located approximately 400 feet north of Luna Lake. Transformers containing PCBs, and drums containing oil drained from PCB transformers, were stored in the building from 1982-1985. According to a March 1989 PSA, the building was demolished in 1988 and stained concrete was disposed of at a PCB storage facility.

In October of 1996, PSA Confirmatory Sampling was performed on the soil and asphalt remaining at the site. Concentrations were below the remedial goals, and the PSA Confirmatory Sampling Report, dated January 10, 1997, recommended NFA required. The GA EPD concurred with the NFA required recommendation in a letter dated July 1, 1997.

Phase Status

NFA - Approved - July 1, 1997



SITE IDENTIFICATION NUMBER: SWMU No. 43 (SS35)

SITE DESCRIPTION: Plastic Shop Baghouses

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: PCE, TCE, 1,1,1-trichloroethane, 1,1,2-trichlorofluoromethane Freon 113, and petroleum-based solvents

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 43 - Plastic Shop Baghouses

Site Summary

Building 670 housed the Quartermaster laundry from its construction in the 1940s until it was changed into a maintenance facility in 1963. Dry cleaning operations were reportedly performed in this building. Dry cleaning agents commonly used during that timeframe include PCE, TCE, 1,1,1-trichloroethane 1,1,2-trichlorofluoromethane (Freon 113), and various petroleum-based solvents. Currently called the plastics shop, Building 670 has been used for servicing miscellaneous non-metallic aircraft parts, such as radomes, since 1963. Chemicals used in the maintenance operation include BTEX, MEK, methyl isobutyl ketone (MIBK), methylene chloride, phenol, ethanol, methanol, isopropyl alcohol, chromium, ammonia, and a variety of coatings and thinners used to clean spray guns and painting equipment.

The 1997 PSA for Building 670, SWMU No. 43 discovered cadmium and barium in the soil. Subsequent groundwater sample analyses indicated the presence of chromium, zinc, carbon disulfide, and TCE. Although only relatively low concentrations were discovered, the contamination was sufficient to lead to a recommendation for an RFI.

Based on findings of the Revised Phase II RFI which will be submitted in December 2000, no contaminants were identified above their applicable screening levels in the surface or subsurface soils for SWMU No. 43. Benzene occurs above screening levels only in the perched aquifer. TCE occurs above screening levels in both the perched and Upper Providence aquifers studied at the site. However, there is no mapable plume of TCE because detections in the monitoring wells are intermittent over time (i.e., not present in the samples over multiple sampling events) and space (i.e., not present in contiguous sampling locations in any direction or elevation). Lead occurs above the screening levels only in the Upper Providence aquifer, however, high turbidity in the associated samples may have caused artificially high concentrations of the metal. No interim actions have been implemented for this SWMU.

The Revised Phase II RFI report for SWMU No. 43, will be submitted to the GA EPD in December 2000, will recommend conducting additional groundwater monitoring for parameters indicative of natural attenuation. The revised report will also contain a human health risk assessment with a Remediation Level (RL) calculated which will define the clean up level. Also recommended was resampling of selected wells for VOCs and metals taking precautions to reduce turbidity in order to reevaluate the metals "contamination" detected during this RFI. Additionally, the installation of a deeper upgradient monitoring well and additional groundwater sampling at temporary locations to determine the downgradient horizontal and vertical extent of the TCE contamination were recommended. Based on the data developed from the RFIs and subsequent investigative activities, a CAP will be prepared to address remediation of the soil and groundwater at SWMU No. 35 as necessary.

Relative Risk

The Building 670 site is rated as a High Relative Risk site. The groundwater chemical of potential concern is TCE and both TCE and PCE were detected in a number of samples above the MCL of 5 ppb.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 44

SITE DESCRIPTION: Phenolic Treatment Facility

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Industrial Wastewater

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 44 - Phenolic Treatment Facility

Site Summary

This building was designed to treat phenolic and ammonia contaminated effluent from IWTP No. 1; however, it was not in use at the time of the PSA. The treatment method was activated carbon. Of the three columns of activated carbon, one was used only as a back-up unit. In addition, if ammonia was present in the effluent from the carbon unit, the wastewater would be processed through air strippers.

The IWTP operated from 1980 to 1985 treating an average of 10 million gallons of water per month. When the plant was closed, the waste carbon and carbon regeneration bins were emptied and all quench tanks and slurry lines were flushed. The waste carbon was transported to the sludge storage facility for disposal. There were no records of any spills or mishaps at the plant nor was there any physical evidence.

This site was recommended for NFA in the PSA Confirmatory Sampling Report dated January 10, 1997. The GA EPD concurred with the recommendation in a letter dated July 1, 1997.

Phase Status

NFA - Approved - July 1, 1997



SITE IDENTIFICATION NUMBER: SWMU No. 45

SITE DESCRIPTION: Chemical Site No-25 and Truck Wash Area

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Lubricating Oils and Antifreeze

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 45 - Chemical Site No-25 and Truck Wash Area

Site Summary

Chemical Site No. 25 was a small storage area, 12.5 feet x 30 feet, used by the generator shop for storing lubricating oils, antifreeze, detergents, and tar remover. The area consists of a concrete pad with a 6-inch concrete berm constructed on an asphalt lot enclosed by a steel mesh fence with barbed wire. Although there was physical evidence of small spills and fluid accumulation in the drip pans placed beneath the drums and 5-gallon containers, the site contained a limited amount of chemicals and the spills appeared to be small considering the number of years that the facility had been used.

Adjacent to the storage pad is an area used to clean heavy equipment such as graders, street sweepers, and bulldozers. The wash area is a 6-inch bermed concrete pad that slopes to a drain that discharges to the IWTP. The drain is cleared of sediment build-up quarterly and the sediment is stockpiled, tested, and sent for disposal.

This site was recommended for NFA in the PSA Confirmatory Sampling Report dated January 10, 1997. The GA EPD concurred with the recommendation in a letter dated July 1, 1997.

Phase Status

NFA - Approved - July 1, 1997



SITE IDENTIFICATION NUMBER: SWMU No. 46

SITE DESCRIPTION: Vehicle Steam Cleaning Area

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 46 - Vehicle Steam Cleaning Area

Site Summary

Building 319 is the Robins AFB vehicle maintenance complex. The steam cleaning area is a poured concrete pad with an 8-inch berm situated on an asphalt lot. The pad is used to steam clean general road and engine grime from vehicles prior to repair operations.

The pad drains to an adjacent, concrete lined, oil/water separator. The separator has no outlet and is periodically pumped out by the IWTP personnel. The water fraction is transported to the IWTP and the oil fraction is taken to the satellite storage area for further treatment. Although the pad area was stained with oils and grease, it was structurally sound at the time of the PSA.

This site was recommended for NFA in the PSA Confirmatory Sampling Report dated January 10, 1997. The GA EPD concurred with the recommendation in a letter dated July 1, 1997.

Phase Status

NFA - Approved - July 1, 1997



SITE IDENTIFICATION NUMBER: SWMU No. 47

SITE DESCRIPTION: Diesel Fuel AST 177-2 250,000 Gallon and Fuel Line to Steam Plant

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Diesel Fuel

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 47 - Diesel Fuel AST 177-2 250,000 Gallon and Fuel Line to Steam Plant

Site Summary

Building 177, a steam plant that supports the BIA and other areas, is located near the BIA, just north of Second Street and east of Cochran Street. SWMU No. 47 is located just east of Building 177, in the vicinity of a 250,000-gallon aboveground storage tank (AST) used to store No. 2 diesel fuel. The diesel fuel is used as an auxiliary fuel for the Robins AFB steam plant. This AST is connected to Robins AFB's tank farm located approximately 1,000 feet east via an underground pipeline. In 1996, while up-grading a containment dike and fuel lines in the vicinity of the AST, petroleum contaminated soil was discovered (Geopex, 1998). Contractors for Robins AFB excavated the visibly contaminated soils during the construction activities.

A PSA was conducted for Building 177 in October 1996 (Robins AFB, 1996). The findings of this assessment indicated a limited release that did not appear to threaten Robins AFB's water supply wells.

In 1997, Geopex, Ltd. conducted a preliminary investigation of the diesel fuel line leak at Building 177 by advancing three Geoprobe™ borings on the site and collecting soil and groundwater samples. Two soil samples, collected at depths of 18 to 20 feet below the ground surface were analyzed for petroleum hydrocarbons using method SW846-8100 (modified). The results of analysis of the samples indicated petroleum hydrocarbons, as diesel fuel at 2,200 mg/kg and 2,900 mg/kg. One groundwater sample also indicated petroleum hydrocarbons at 15 milligrams per liter (mg/L). Based on this data, Robins AFB concluded that the release of diesel fuel to soil may not have been completely remediated and that the groundwater may have been affected by the release. Based on the results of the preliminary investigation and other data gathered when the release was discovered, Robins AFB is performing an RFI which is scheduled to be completed by September 2000. An IM Work Plan was approved in March 2000 and should be implemented starting July 2000.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 48 (DC34)

SITE DESCRIPTION: Miscellaneous Disposal Sites

ENVIRONMENTAL CONCERN: Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Solvents

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 48 - Miscellaneous Disposal Sites

Site Summary

This SWMU is located southeast of Robins AFB's Small Arms Range. IRP Site DC34 was identified as a potential source of contamination as a result of a 1996 PSA. Three individual SWMUs were identified as making up DC34 and a RFI was recommended. Included under the DC34 investigation were (1) SWMU No. 36, Horse Pasture Trench Disposal Site; (2) SWMU No. 48, Miscellaneous Disposal Sites; and (3) SWMU No. 49 Horse Pasture West of Site RW15. The RFI began in November 1997 based on a work plan approved by the GA EPD in October 1997. Field work supporting the RFI is complete and report preparation is ongoing. The report is scheduled to be finalized by the consultant, Geophex, Ltd., reviewed by Robins AFB Environmental Management, and accepted by the GA EPD by September of 2000.

The focus of the investigation was to be the suspected groundwater contamination impacting RW15 Low Level Radioactive Burial Site and the numerous metallic anomalies detected with Ground Penetrating Radar. However, analysis of the groundwater samples obtained during the first phase of monitor well installation and sampling during the RFI, indicated VOC contamination at the Robins AFB boundary. Contaminated groundwater was, apparently, moving off the Base. Delineating the possible contamination moving off the reservation became an additional goal of the RFI. A greatly expanded scope of well construction was determined to be necessary and those wells were installed during the spring and summer of 1999. Three of the wells were to be placed on private land used for timber cultivation outside the Robins AFB boundary to definitively delineate the horizontal extent of contamination from the migrating groundwater.

Relative Risk

The Relative Risk for the DC34 site is rated as High. This is related to groundwater, surface water, soil and sediment contamination. The source (or sources) of the contamination is presently unknown but is being evaluated as part of the RFI report.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 49 (DC34)

SITE DESCRIPTION: Horse Pasture West of Site RW15

ENVIRONMENTAL CONCERN: Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Solvents

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 49 - Horse Pasture West of Site RW15

Site Summary

This SWMU is located southeast of Robins AFB's Small Arms Range. IRP Site DC34 was identified as a potential source of contamination as a result of a 1996 PSA. Three individual SWMUs were identified as making up DC34 and a RFI was recommended. Included under the DC34 investigation were (1) SWMU No. 36, Horse Pasture Trench Disposal Site; (2) SWMU No. 48, Miscellaneous Disposal Sites; and (3) SWMU No. 49 Horse Pasture West of Site RW15. The RFI began in November 1997 based on a work plan approved by the GA EPD in October 1997. Field work supporting the RFI is complete and report preparation is ongoing. The report is scheduled to be finalized by the consultant, Geophex, Ltd., reviewed by Robins AFB Environmental Management, and accepted by the GA EPD by September of 2000.

The focus of the investigation was to be the suspected groundwater contamination impacting RW15 Low Level Radioactive Burial Site and the numerous metallic anomalies detected with Ground Penetrating Radar. However, analysis of the groundwater samples obtained during the first phase of monitor well installation and sampling during the RFI, indicated VOC contamination at the Robins AFB boundary. Contaminated groundwater was, apparently, moving off the Base. Delineating the possible contamination moving off the reservation became an additional goal of the RFI. A greatly expanded scope of well construction was determined to be necessary and those wells were installed during the spring and summer of 1999. Three of the wells were to be placed on private land used for timber cultivation outside the Robins AFB boundary to definitively delineate the horizontal extent of contamination from the migrating groundwater.

Relative Risk

The Relative Risk for the DC34 site is rated as High. This is related to groundwater, surface water, soil and sediment contamination. The source (or sources) of the contamination is presently unknown but is being evaluated as part of the RFI report.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 50

SITE DESCRIPTION: Fire Protection Training Area No.5

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: JP-4 and JP-8 Fuel

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 50 - Fire Protection Training Area No.5

Site Summary

SWMU No. 50 consists of FPTA No. 5 located east of the main runway and south of the 19th Air Refueling Group. Concrete and contaminated soils were removed from FPTA No. 4 in the late 1980s. FPTA No. 5 was constructed on the same site.

FPTA No. 5 is a new facility that was constructed to prevent contamination of soil and groundwater. A circular concrete pad and mock aircraft burn model are currently visible. The concrete pad is six inches thick with a six-milliliter vapor barrier and 6 ¾ inches of crushed stones beneath it. The burn pit often contains standing water.

Overflow from the burn pit goes to an oil/water separator where fuels are skimmed from the water surface, collected, and reused. The water goes from the oil/water separator through a defoaming process and is then piped to the IWTP. Effluent is no longer discharged to Horse Creek or to the wetlands.

A chain link fence on the west, north, and south sides encloses the training area. The wetlands and Horse Creek are on the east side of the site. Groundwater flows generally eastward towards Horse Creek.

When Fire Training Pit No. 5 was being constructed, samples were taken of the soil under the concrete slab as well as the seams where the water stops were located. The analytical results from the soil under the concrete slab were under detection limits and the soil under the joints had only trace amounts of JP-4. All contaminated soil was removed and disposed so that no contaminated soil was left under the present Fire Training Pit No. 5.

A PSA for FPTA No. 5 was submitted to the GA EPD on October 2, 1997 (letter dated September 24, 1997). Received NFA from the GA EPD closing this site.

Relative Risk

The Relative Risk for the SWMU No. 50 site is rated as Low. The site is rated Low because there is no soil contamination and the groundwater contamination has been included under the GBIA RFI Phase II. There are no potential receptors associated with the contamination from this site.

Phase Status

NFA



SITE IDENTIFICATION NUMBER: SWMU No. 51

SITE DESCRIPTION: Oil/Water Separator

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Compounds

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 51 - Oil/Water Separator

Site Summary

This oil/water separator, designated OWS No. 52, was located on the eastern side of Building 680. The unit was constructed of reinforced concrete and was approximately three feet square and four feet deep. Although there have been no documented releases from this site, given the nature of an oil/water separator, it is possible that spills or overflows may have occurred.

Based on the results of the previous sampling efforts, no specific chemicals were targeted for this SWMU, however, the investigation of all the surrounding SWMUs included volatile compounds and the eight RCRA metals. In addition, one soil sample was collected and analyzed for diesel fuel components (i.e., BTEX, PAHs, and TPHs). The oil/water separator was removed in 1995 and the excavation was backfilled with clean soil. No other interim actions have been implemented at this site.

The analytical results from the tests performed for petroleum hydrocarbons indicated that no remedial measures were required. As a result, the Revised RFI Report for Buildings 670/680, which will be submitted to the GA EPD in December 2000, will recommend NFA for this site.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 52

SITE DESCRIPTION: Chemical Storage Shed

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: None Designated

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 52 - Chemical Storage Shed

Site Summary

The chemical storage shed is southeast of Building 680 and measures approximately 50 feet by 50 feet. The concrete is sealed with an epoxy-based paint to make it impervious to the chemicals that are handled at the site. However, the current concrete floor and berms were installed sometime in the 1980s. The original concrete floor reportedly had numerous cracks.

A review of Robins AFB spill records indicate that there had been only one response to that site for a bulging drum (Geophex, 1997). As a result, the only documented release had been to the air. However, given that the site was used for chemical storage, and that it had a cracked floor without berms for a period of time, there was a potential for spills and releases to have occurred.

Based on the results of the previous sampling efforts, no specific chemicals were targeted for this SWMU; however, the investigation of all sites in the area included volatile compounds and eight RCRA metals, with several additional analyses at selected locations. These additional analyses included dioxins/furans, pesticides, herbicides, PCBs, sulfide, and cyanide. No chemicals, other than those already referenced, are suspected at this SWMU.

No ICMs have been implemented at this site as a result of the previous investigations. However, in the early 1980s, the concrete pad of the chemical storage shed was replaced with a new curbed, epoxy-coated pad, to prevent releases to the subsurface from incidental spills.

The Revised Phase II RFI will be submitted in December 2000, will indicate that no soil or groundwater contamination was detected above screening levels at the SWMU No. 52 site. The Revised Phase II RFI report, will conclude that SWMU No. 52 can be ruled out as a source of soil and groundwater contamination and that NFA need be taken.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 53 (AOC8)

SITE DESCRIPTION: Storm Sewer System- Base Industrial Area to Outfall 009

ENVIRONMENTAL CONCERN: Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Solvents, Parts Cleaning Chemicals, Metals, And Other Chemicals Associated With BIA Activities

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 53 - Storm Sewer System- Base Industrial Area to Outfall 009

Site Summary

(This site is included under the OT20 RFI Phase II for the GBIA.)

Interviews with Robins AFB personnel indicate that solvents may have been dumped, spilled, or washed into storm drains from certain buildings in the BIA such as Buildings 181, 142, and possibly others (LAW Engineering, Final RCRA Facility Investigation Technical Report, Site OT20: BIA, October 1996). Engineering Science's Installation Restoration Program, Phase I - Records Search, Robins AFB, Georgia, dated April, 1982, outlines approximate quantities of chlorinated solvents, hydraulic oil, motor oil, and IWTP sludges generated from certain BIA buildings. That report indicates that the disposal of those chemicals was accomplished by burning in fire training areas, by discharging into storm sewers, sanitary sewers and/or the sludge lagoon, or by burying in on-base landfills until the IWTP and the "defense property disposal office" (DPDO) came into use (different time periods for different Robins AFB operations). This information was reportedly documented through record searches and interviews with Robins AFB personnel and was summarized in the original report.

The Engineering Science's report also states the following: "the storm sewer systems on-base consist primarily of concrete conduits or open-channels which directed drainage towards tributaries of Horse Creek. The systems in the areas of aircraft maintenance functions received some discharges of wastes from maintenance activities from the mid-1940's through the early 1970's. In the mid 1970's, oil/water separators were installed in many of the systems."

As described in HAZWRAP's Flightline Investigation report, dated May, 1996, TCE concentrations as high as 17,000 µg/L were detected in groundwater samples from approximately 48 feet below land surface in an area about 200 feet to the east of the line and outfall area. Additionally, TCE "hot spots" were detected at concentrations greater than 10,000 µg/L beneath the edge of Landfill No. 2 in close proximity to the drainage ditch around the landfill. These concentrations exceed 1 percent of the aqueous solubility for TCE and indicate close proximity to a DNAPL source. Other high concentrations in groundwater were detected beneath the grassy slope northeast of the jet engine repair facility (see Flightline Investigation report and SWMU No. 56 Data Sheet). The SWMU No. 53 culvert also passes through that area. Because of the potential for solvents, parts cleaners, and other chemicals having been discharged through the storm-drain sewers, the areas along the culvert and the outfall area are suspect locations for sources of soil and/or groundwater contamination.

Additionally, Basewide Sampling analytical results from various downgradient groundwater monitoring wells in the BIA continue to show groundwater contamination. Portions of this storm sewer were videotaped as part of the GBIA RFI Phase II. A significant length of this storm sewer is corrugated metal pipe, which has numerous defects along the line. This leaves the potential for exfiltration to groundwater. Samples of the fluid in the storm sewer and of the effluent from Outfall No. 9 were taken. Soil and groundwater samples were also collected along the sewer line.

Based on the results of the GBIA RFI Phase II, No Further Action is recommended for soils at SWMU 53. The groundwater contamination detected beneath SWMU 53 is included in the CAP for SWMU 20.

Relative Risk

The Relative Risk for this SWMU has been evaluated as part of IRP Site OT20, which is a High relative risk.

Phase Status

RFI to be approved in July 2000.



SITE IDENTIFICATION NUMBER: SWMU No. 54 (OT20)

SITE DESCRIPTION: Industrial WWTP Process Line between Buildings 142 and 141

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Solvents, Metals, Acids, and Paint Strippers

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 54 - Industrial WWTP Process Line between Buildings 142 and 141

Site Summary

(This site is included under the OT20 RFI Phase II for the GBIA.)

The IWTP process line in question is reportedly located beneath the ground surface between Buildings 141 and 142 inside a concrete tunnel in the center of the BIA. The tunnel was constructed around 1969 at the time of construction of the plating shop (Building 142) and IWTP No. 2 at Building 141. The purpose of the line(s) is to carry industrial wastewater from Building 142, a metal finishing operation for the electroplating of aluminum, titanium, and steel, to the IWTP (Building 141) for treatment before discharge. Building 141 consists of two separate treatment plants with IWTP No. 1 treating wastes from other BIA sources and IWTP No. 2 treating wastes from only Building 142. Robins AFB drawings indicate that another line runs out of Building 142 (on the opposite side from Building 141) into the main IWTP line system that goes around Building 140. That line collects input from various other lateral and main lines, and finally empties into a tank that is part of IWTP No. 1. There, the waste products undergo pre-treatment before being pumped to Building 141 for final processing. According to Robins AFB personnel associated with the IWTP, other lines are buried underneath the tunnel in the alleyway between Buildings 142 and 141. Those include lines to the sewage treatment plant, an IWTP sludge line to the de-watering plant, and IWTP fluid return lines from the de-watering plant to IWTP No. 1.

Soil and groundwater samples were collected in the vicinity of this process line as part of the GBIA RFI Phase II. Based on the results of this investigation, No Further Action is recommended for SWMU 54. The groundwater contamination detected beneath SWMU 54 is included in the CAP for SWMU 20.

Phase Status

RFI to be approved July 2000.



SITE IDENTIFICATION NUMBER: SWMU No. 55 (SS40)

SITE DESCRIPTION: Soil Contamination at Monitoring Well RB20MW6

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Solvents, Parts Cleaner Chemicals, Metals, and Other Chemicals Associated With BIA Activities

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 55 - Soil Contamination at Monitoring Well RB20MW6

Site Summary

(This site is included under the OT20 RFI Phase II for the GBIA)

This area is around monitoring well RB20MW6 and RB20MW6D, located near a wastewater/stormwater sewer line between Buildings 190 and 150 and four other SWMUs included in the BIA. RB20MW6 is also about 300 feet west of former Base Water Supply Well No. 3, now abandoned, and about 150 feet east of Building 181. The three buildings and the groundwater monitoring wells are located near the intersection of Robins Parkway and First Street. Building 150 is currently used as a battery maintenance and hydrostatic shop. The hydrostatic shop performs repair maintenance and recharge of compressed gas cylinders. Building 150 was reportedly constructed in 1944, and was originally used as an “aircraft repair” shop until around 1963. A lift station facility for two IWTP lines, one for general industrial waste and one for battery waste, is located adjacent to Building 150. Building 190 is currently used as a maintenance and repair shop for large vehicles, such as fuel tanker trucks. Two oil-water separators are located at Building 190. Building 190 appears to be of much more modern, corrugated metal construction, as compared to the older, brick-type construction of Building 150. Building 190 was reportedly constructed in 1963 and was originally used as a “vehicle maintenance” and “refueling” station.

In their Draft Final RFI Report (May 1992), Engineering Science noted that soil samples collected during the installation of RB20MW6 and RB20MW6D contained high levels of TCE, PCE, BTEX compounds, and some PAHs. Analysis of groundwater samples collected from RB20MW6 during subsequent Basewide Sampling events continue to have high concentrations of 1,2-dichlorobenzene, TCE, benzene, ethylbenzene, toluene, naphthalene, trichlorobenzene, and dichlorobenzene isomers. TCE has also been detected in RB20MW6D.

The extent of the free product and the extent of soil and groundwater contamination in the source area have been fully delineated. Additional soil and groundwater sampling was conducted as part of the GBIA RFI Phase II investigation to address data deficiencies in this area.

Relative Risk

The relative risk for this site has been evaluated as part of IRP site SS40 (SWMU 10B and SWMU 55), which is a high relative risk. This is because of the groundwater media (CHF = Significant, Migration Pathway Factor = Evident and Receptor Factor = Potential). The project will intercept the groundwater flow toward the wetlands at the Robins AFB boundary resulting in a confined MPF. This will drop the SS040 rating from high to medium.

Phase Status

The GBIA RFI Phase II is scheduled for approval by the GA EPD in the summer of 2000. The Corrective Action Plan for this site has been awarded to URS for completion.



SITE IDENTIFICATION NUMBER: SWMU No. 56 (AOC11)

SITE DESCRIPTION: Jet Engine Maintenance

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

**CONTAMINANTS PRESENT OR SUSPECTED: Engine Fluids and
Lubricants and Parts Cleaning Solvents**

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 56 - Jet Engine Maintenance

Site Summary

(This site is included under the OT20 RFI Phase II for the GBIA.)

The site is located in the eastern portion of the Base Industrial Complex (approximately 700 feet due east of Building 142). The three buildings are on a concrete apron, approximately 350 feet x 400 feet, with an asphalt strip approximately 30 feet wide around the perimeter of the concrete apron. The larger, open, pavilion-type building in the central portion of the concrete apron is flanked by two rectangular-shaped storage/maintenance buildings, one approximately 125 ft to the south (Building 256) and one approximately 50 ft to the southeast (Building 257). The larger, center building has a plate with the number “145” on it. However, according to Robins AFB Civil Engineering’s Real Property (RP) office, that building is not officially Building 145. The number “145” apparently refers to the concrete pad number. According to RP, the other two buildings are numbered correctly. The PSA refers to the three buildings on the concrete apron as Buildings 145, 256, and 257. A grassy area northeast of the concrete apron slopes downward to a drainage ditch located about 100 feet to the northeast.

Historical aerial photographs show the area being used for aircraft parking and/or maintenance as early as 1945 (Figure I-29 in Time Capsule: A Chronology of the Role of Warner Robins Air Logistics Center and Robins Air Force Base, Georgia in World History 1935-1995) and as late as 1977 (upper left corner of Fig. 1.6 of Engineering Science’s Installation Restoration Program Phase II - Confirmation Quantification Stage 2 Vol. 1, Robins AFB, GA, January 1988). Because these photos show no buildings present on the concrete pad, they must have been constructed sometime after 1977 for the jet engine repair, storage, and maintenance mission. Two distinct drainage ditches converge into one at the base of the slope off the northwest edge of the concrete pad at Building 145. Drainage also occurs from another small concrete pad area located 400 feet to the north where aircraft maintenance/repair is performed. The runoff flows to the southeast toward the wetlands.

A storm sewer culvert (SWMU No. 53) which originates at/near Building 181 passes underneath the northernmost corner of the Building 145 concrete apron area. That storm sewer empties at an outfall near Landfill No. 2. Additionally, Robins AFB drawings indicate that a sump and a storm drain system exist underneath the concrete apron. The storm drain empties at an outfall approximately 200 feet from the southern most corner of the apron.

Groundwater sampling conducted during HAZWRAP’s 1995 flightline investigation indicated “hot spots” with TCE concentrations as high as 12,430 ppb beneath the drainage area to the northeast of the concrete pad. Samples collected during annual Basewide Sampling have supported these results by showing relatively high concentrations of dissolved TCE in monitoring wells near the Building 145 area. An interim remedial action was initiated in 1997 to achieve mass removal in “hot spot” areas. An extraction well, OT20EWI, located near Building 145, extracts groundwater and is connected to the groundwater treatment system installed as part of the OU3 RA.

Additional soil and groundwater samples were collected in this area in late 1998 and early 1999. Results will be reported in the GBIA Phase II RFI Report.

Relative Risk

The Relative Risk for this SWMU has been evaluated as part of IRP Site OT20, which is a High relative risk.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 57 (OT41)

SITE DESCRIPTION: Twin 72-Inch Underground Storm Drain Culvert System Through South Flightline

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Chlorobenzene

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 57 - Twin 72-Inch Underground Storm Drain Culvert System Through South Flightline

Site Summary

This culvert system is described in the Outfall 003 Culvert Survey Report compiled by PES Engineering Science, Inc. (PES), dated June 1995. As documented in Robins AFB's Time Capsule: A Chronology of the Role of the Warner Robins Air Logistics Center and Robins Air Force Base, Georgia, in World History, 1935-1995, the existing runway system at Robins AFB was renovated/expanded in the mid 1950's. Logically, the culvert drainage system would have required an extension. The slope change and two distinct types of construction noted by PES probably correlates with those two runway construction periods. As the culvert and point of outfall was extended farther to the east across the old flood plain boundary and into wetland areas, the slope change to a lower elevation may have been necessary. Therefore, the western part of the culvert system out to the "slope change" area was most likely constructed in the early 1940's (as PES reported), and the eastern portion beyond the "slope change" was most likely constructed in the mid 1950's.

PES's culvert survey involved traversing and visually inspecting the interior of the culverts, which were divided into hundred foot "stations" for reference. The culvert discharges to a lagoon through a concrete headwall structure located off Beale Drive just north of Building 21. The only identified dry-weather source of flow to the junction box is non-contact cooling water from Building 140 and is considered an allowable non-stormwater connection. This results in detectable flows in the culverts during dry-weather periods.

PES concluded that approximately 1,700 feet of the eastern section of the culverts were in very good condition. However, in the remaining eastern portion of the culverts, the lower walls exhibited signs of corrosion penetration allowing possible infiltration into the culvert. Surface water samples collected along the length of the culverts contained TPHs, BTEX, TCE, and chlorobenzene.

During the Flightline Investigation, HAZWRAP performed limited Geoprobe™ sampling of groundwater and detected several contaminants about half way between the main runway and the taxiway beside Beale Drive. Another significant area of contamination was discovered where an 8-inch JP-8 fuel product line passes underneath the culverts. A leaking valve in this JP-8 fuel line was subsequently discovered (SWMU No. 61) and repaired in 1996.

Additional soil and groundwater samples were collected and fuel fluorescence screening was conducted as part of the GBIA RFI Phase II Report. Recommendations for this SWMU include preparation of a BRA and a CAP for chlorobenzene soil and groundwater contamination.

Relative Risk

The Relative Risk for the SWMU No. 57 site (OT041) is rated as High. This is because the CHF (CHF) for groundwater is significant based on the total concentration to standard ratio being

greater than 100. With a migration pathway factor of potential and a receptor factor of potential, the overall relative risk is rated as High.

Phase Status

RFI to be approved July 2000. BRA/CAP has been awarded to URS and will begin in July 2000.



SITE IDENTIFICATION NUMBER: SWMU No. 58 (AOC13)

SITE DESCRIPTION: Culvert/Storm Drain from Base Industrial Area to Drainage Ditch at FPTA No. 3

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Solvents, Parts Cleaner, Metals, BIA Chemicals, and Possible BTEX

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 58 - Culvert/Storm Drain from Base Industrial Area to Drainage Ditch at FPTA No. 3

Site Summary

(This site is included under the OT20 RFI Phase II for the GBIA)

This SWMU consists of a 42-inch storm drain culvert that runs generally east underneath the main runway and taxiway, turns northeast between the runway and active taxiway, and empties into a drainage ditch north of FPTA No. 3. The ditch drains into Horse Creek in the wetlands to the east. It is suspected that TCE may be migrating along this culvert and may be partially responsible for TCE contamination detected northeast of the Base Operations Office and in the monitoring wells at FPTA Nos. 3 and 4.

This culvert provides drainage from a network of culverts located in the flightline area along taxiways G, B, and E, and along the C-130 parking strip. Although there are no documented hazardous waste or hazardous constituents associated with this SWMU, various metals, solvents, parts cleaners, paint-related wastes, and other chemicals associated with aircraft repair and maintenance, as well as possible jet fuel spills near the runway/taxiway areas could have potentially been discharged to stormwater passing through this storm drain.

Portions of this storm sewer were videotaped as part of the GBIA RFI Phase II. Access to manholes was limited along this line. Of the lines televised, the pipe was found to be in good shape with no defects except at one location in the eastern-most section of the pipe where the joint gasket had pulled loose. This is a potential source of exfiltration.

Additional soil and groundwater sampling was conducted in this area as part of the GBIA RFI Phase II Report. The RFI was approved by the GA EPD in July 2000. The investigation and subsequent report indicates that No Further Action is required for this SWMU. The groundwater contamination will be addressed in the SWMU 20 CAP.

Relative Risk

The Relative Risk for this SWMU has been evaluated as part of IRP Site OT20, which is a High relative risk.

Phase Status

Completed



SITE IDENTIFICATION NUMBER: SWMU No. 59

SITE DESCRIPTION: JP-8 Product Line along Main Controlled Taxiway

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 59 - JP-8 Product Line along Main Controlled Taxiway

Site Summary

SWMU No. 59 is a jet fuel plume located along taxiway "G", the main controlled taxiway at Robins AFB. An active JP-8 pipeline runs parallel to the controlled taxiway and through the western, upgradient area of the site. An older abandoned JP-4 pipeline is also known to exist, running parallel to and approximately 5 feet to the east of the active pipeline through the SWMU No. 59 area. Previous investigations of the site in 1995 (Flightline Investigation Phases I and II, HAZWRAP, 1996) and 1998 (Draft Final Interim Measures Investigation Report for SWMU Nos. 59 and 60 Free Product Delineation, Rust, 1998) have identified petroleum hydrocarbon contamination of soils and groundwater. Free phase product was also found at the site. Based on the location of the pipelines in relation to the spatial configuration of contamination at the site, it was presumed that either or both pipelines were the source of the jet fuel release. However, recent tracer gas testing (Draft Addendum to Interim Measures Investigation Report, Rust, 1999) of the pipeline failed to identify an active leak in the JP-8 line.

Dissolved phase groundwater contamination is present at both SWMU No. 59 and SWMU No. 60. The maximum downgradient plume length of benzene is about 4800 feet at SWMU No. 59 (based on HAZWRAP, 1996). The horizontal and vertical extent of groundwater contamination has been evaluated by the GBIA RFI Phase II Report, currently under review.

The site is regulated under the GA EPD RCRA program. While the site is being more fully investigated during the Phase II RFI, interim corrective measures are being conducted. A Deep Vacuum Extraction system was constructed in the winter of 1999/2000 and is currently being operated for removal at the SWMU No. 59 site. The system was built to target free-phase NAPL (NAPL) and residual hydrocarbon contamination in the unsaturated zone at the south end of the pipeline at SWMU No. 59. Although this area contains the thickest free-phase NAPL plume observed at both the SWMU No. 59 and SWMU No. 60 sites, no free phase product is being recovered. However, very significant concentrations (up to 23,000 ppm TPH) are being recovered in the gaseous phase. Based on the results and effectiveness of this interim measure, an expansion of interim measures will be designed and implemented for the remaining remedial target areas of SWMU Nos. 59 and 60. Results of the interim measures will be combined with data from the RFI Phase II, the OU2 Wetlands Baseline Risk Assessment, and a planned site-specific risk assessment for SWMU Nos. 59 and 60 to support development of a final CAP.

Phase Status

RFI (Interim RA currently operating)



SITE IDENTIFICATION NUMBER: SWMU No. 60

SITE DESCRIPTION: JP-8 Product Line near intersection of Taxiway No.2 and Taxiway No.3

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 60 - JP-8 Product Line near intersection of Taxiway No.2 and Taxiway No.3

Site Summary

SWMU No. 60 is a jet fuel plume located at the intersection of taxiways No. 2 and No. 3, now called taxiways "B" and "H", just east of the control tower at Robins AFB. An active JP-8 pipeline runs parallel to the controlled taxiway and taxiway "H" and through the western, upgradient area of the site. Previous investigations of the site in 1995 (Flightline Investigation Phases I and II, HAZWRAP, 1996) and 1998 (Draft Final Interim Measures Investigation Report for SWMU Nos. 59 and 60 Free Product Delineation, Rust, 1998) have identified petroleum hydrocarbon contamination of soil and groundwater. Free phase product was also found at the site. Based on the location of the active JP-8 pipeline in relation to the spatial configuration of contamination at the site, it was presumed that the pipeline was the source of the jet fuel release. However, recent tracer gas testing (Draft Addendum to Interim Measures Investigation Report, Rust, 1999) of the pipeline failed to identify an active leak in the JP-8 line.

Dissolved phase groundwater contamination is present at both SWMU No. 59 and SWMU No. 60. The maximum downgradient plume length of benzene is about 4000 feet at SWMU No. 60 (based on HAZWRAP, 1996). The horizontal and vertical extent of groundwater contamination will be evaluated by the GBIA RFI Phase II, currently under review.

The site is regulated under the GA EPD RCRA program. While the site is being more fully investigated during the Phase II RFI, interim corrective measures are being conducted at SWMU 59. Based on a work plan approved by the GA EPD in May 1999, a Deep Vacuum Extraction system is currently being designed for the SWMU No. 59 site. The system will target free-phase NAPL (NAPL) and residual hydrocarbon contamination in the unsaturated zone at the south end of the pipeline. Based on the results and effectiveness of this interim measure, an expansion of interim measures will be designed and implemented for the remaining remedial target areas of SWMU Nos. 59 and 60. Results of the interim measures will be combined with data from the RFI Phase II, the OU2 Wetlands Baseline Risk Assessment and a planned site-specific risk assessment for SWMU Nos. 59 and 60 to support development of a final CAP.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 61

SITE DESCRIPTION: JP-8 Product Line near South End of Main Runway

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 61 - JP-8 Product Line near South End of Main Runway

Site Summary

The section of pipeline that comprises SWMU No. 61 is an 8-inch diameter underground JP-8 fuel line that runs northeast from the POL storage area, crosses underneath the main runway, and carries fuel to the J-STARS/Aerial Refueling operation area in the northeast part of the Base. The line carried JP-4 until Robins AFB switched to JP-8 for aircraft fuel in June 1994. The line is typically buried approximately four to six feet below land surface, however, where it passes under the twin 72-inch storm drain culvert (SWMU No. 57), it is buried at about 30 feet below land surface to provide clearance beneath the culvert.

During the Flightline Investigation, free product and dissolved phase contamination were detected in the twin 72-inch storm drain culverts. The source of this contamination was determined to be a leaking valve in the JP-8 fuel line (SWMU No. 61) running below the culvert.

The leaking section of the JP-8 product line was excavated following the Flightline Investigation and repaired. The full extent of free product and soil/groundwater contamination resulting from the fuel leak was not delineated during the Flightline Investigation. A PSA was completed for this SWMU in April 1997 and a complete characterization of this SWMU is being conducted during the GBIA RFI Phase II to fully delineate the extent of free product and dissolved contamination associated with this SWMU. Results of the RFI Phase II, the OU2 Wetlands Baseline Risk Assessment, and a planned site-specific risk assessment for SWMU 61 will be combined to support development of a final CAP.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 62 (OT37)

SITE DESCRIPTION: Third Street Storm Sewer and Outfall

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: TCE

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 62 - Third Street Storm Sewer and Outfall

Site Summary

A groundwater contaminant plume containing dissolved PCE, TCE, DCE, and carbon tetrachloride (CT) on the western, upgradient edge of Landfill No. 4 was identified in 1990. This is documented in the Remedial Investigation, Zone 1, Final Report (CH2M Hill, 1990) and the Draft Remedial Investigation Report, Zone 1, Operable Unit 3; Groundwater (CH2M Hill, December 1993). The investigation of a suspected drum disposal area (Results of Groundwater Characterization at Suspected Tank and Drum Disposal Area, Zone 1, Landfill 4, HAZWRAP, 1996) indicated that a more concentrated zone of the plume is apparently centered underneath the general area near a 48-inch storm sewer outfall which empties into the run-on control structure designed to channel storm water runoff around the western edge of the landfill. The storm sewer system draining the Third Street Area (described in the Robins AFB Stormwater Pollution Prevention Plan as drainage area 6) was identified as the drainage system for the outfall.

The Potential Source Assessment, Third Street Storm Sewer System and Outfall, SWMU No. 62 (HAZWRAP, July 1997) recommended a plan for confirmatory sampling and source identification. The Supplemental PSA, Third Street Storm Sewer System and Outfall, SWMU No. 62 (OPTECH, October 1997) documented the results of additional soil and groundwater sampling in the vicinity of Buildings. 350 and 354. The Supplemental PSA report recommended a RFI with special focus on vertical and horizontal plume delineation.

The RFI was completed in November 1999. Results indicate that the Third Street Storm Sewer is not the potential source of contamination. Since groundwater is the only contaminated media, efforts to determine the source are not warranted and will be discontinued. A CAP is presently underway and should be completed by July 2001.

Relative Risk

The Relative Risk for the OT37 site is rated as High. This is because the CHF for groundwater is moderate because the total concentration ratio is between two and one hundred, which when coupled with a migration pathway factor of evident and a receptor factor of potential, causes the relative risk to be rated as high.

Phase Status

FS/CAP



SITE IDENTIFICATION NUMBER: SWMU No. 63 (OT38)

SITE DESCRIPTION: Test Firing Range for M16-20mm Guns

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Lead

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 63 - Test Firing Range for M16-20mm Guns

Site Summary

The Test Firing Range at Robins AFB is located at the northeast end of the Base adjacent to the Base boundary and was operated from 1960 to 1996. A PSA completed in 1997 identified elevated levels of lead in the soil, sediment, and groundwater. An RFI was completed in December 1998, which included extensive soil, sediment, surface water, and groundwater sampling. Results of the investigation indicated localized lead-contaminated soils. Surface water, groundwater, and sediments did not contain lead warranting further action. The RFI report, submitted to the GA EPD in July 1999, was approved by the GA EPD in May 2000. GA EPD comments on the RFI report also calculated a Remediation Level (RL) of 930 mg/kg for surface and subsurface soils. Robins AFB is currently preparing a Corrective Action Work Plan to remove the soils that exceed the RL calculated by the GA EPD. Groundwater results indicate that leaching of lead above detectable levels has not occurred. The CAP Work Plan will include proper abandonment for the existing monitoring wells at this site.

Relative Risk

The Test Firing Range is rated as a High Relative Risk site. The concentration of lead in surface and subsurface soil exceeded the RL of 930 mg/kg in two samples. Exceeding the human health risk-based value in soil indicates that the lead concentration at these locations will need to be addressed in a CAP for this site.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 64

SITE DESCRIPTION: Two Former Heating Oil Tanks

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

SWMU No. 64 - Two Former Heating Oil Tanks

Site Summary

A 550-gallon UST and a 1,900-gallon UST were used for storing heating oil at Building 993. Both tanks were removed in February 1995. Following removal of the USTs, approximately 67 tons of soils were removed, and soil and groundwater sampling were performed. A PSA, dated October 31, 1997, recommended NFAR at the site. The GA EPD concurred with the NFAR recommendation in a letter dated January 2, 1997 (the correct date was January 2, 1998).

Phase Status

NFA - Approved - January 2, 1998



SITE IDENTIFICATION NUMBER: SWMU No. 65

SITE DESCRIPTION: Former Heating Oil Tanks

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

SWMU No. 65 - Former Heating Oil Tanks

Site Summary

The Building 994 site, SWMU No. 65, is located on the southern part of Robins AFB, east of Macon Street, north of Twelfth Street, and next to Building 664 (Fire Station). Building 994 housed a Thrift Shop until the building was removed in July 1997. Construction of new housing units was completed in the spring of 1999.

A 1,900-gallon Heating Oil UST was installed at Building 994 in 1955 and operated until 1995 (Geophex 1997). The UST was removed on February 3, 1995 (Geosciences, 1995). EM anticipated that the GA EPD would require further investigation of this potentially contaminated site including a PSA Report and an RFI.

On August 20, 1996, the GA EPD sent Robins AFB a letter requesting completion of a PSA as a requirement of the Robins AFB RCRA Part B Hazardous Waste Facility Permit No. HW-064(S). A Work Plan was prepared and sent to the GA EPD on February 20, 1997. The plan outlined the procedures for addressing all potential sources of contamination on Robins AFB from recent or current operations, not previously investigated by the IRP.

A PSA was conducted at the Building 994 site during August 1997 (Geophex, 1997b). Five Geoprobe™ borings were advanced in and around the former UST area. Soil contamination was found at levels as high as 400 mg/kg of TPH. In addition, a groundwater sample taken from the boring beneath the former UST pit showed TPH diesel range organics (DRO) contamination of 23 mg/L. The PSA recommended that an RFI be conducted to investigate the extent of soil and groundwater contamination.

Based on the presence of contamination, Robins AFB EM contracted with Geophex to conduct additional Geoprobe™ investigations in December 1997. Thirteen borings were advanced to the surficial water table and both soil and groundwater samples were collected and screened on site by a mobile laboratory. Splits of soil samples selected on the basis of screening results were submitted to a certified laboratory. The results indicated that groundwater contamination from petroleum products was present at low levels. Only benzene exceeds established MCLs for groundwater immediately beneath the former UST site.

As part of the 1998/1999 RFI investigation six monitoring wells were installed at the site. Five wells were installed in the surficial aquifer and one in the underlying Providence aquifer. Fourteen PAHs compounds and six metals were detected in the composite soil sample from groundwater monitoring well 994MW-2, which is approximately where the former heating oil tank was located. One groundwater sample collected from groundwater monitoring well 994MW-2 contained a trace of phenanthrene but no other volatile or semi-volatile compounds were detected. All of the fuel-related compounds identified in the RFI Report consisted of PAHs that are considered to be only slightly mobile to almost completely immobile. The near absence of these and other compounds in site groundwater indicates that the more volatile petroleum constituents have naturally attenuated. The presence of methane in site groundwater suggests

some biodegradation of the residual PAHs is occurring. The absence of PAHs in monitoring wells outside the source area confirms that natural attenuation has confined contaminants to the source area. Because of the low concentration, limited distribution, immobility of the PAHs, presence of natural attenuation parameters, and absence of BTEX detected in site soils and groundwater, NFA is deemed necessary for this site. The GA EPD requested that a Preliminary Human Health Risk Evaluation (PHHRE) be performed and incorporated into the RFI Report. The PHHRE was completed and incorporated as an appendix in the RFI Report and submitted to the GA EPD in April 2000 for review and comment.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: SWMU No. 66

SITE DESCRIPTION: Tar Pit at ANG B-1 Site

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 66 - Tar Pit at ANG B-1 Site

Site Summary

On August 28, 1997, construction equipment working at the Georgia Air National Guard B-1 bed-down area, located at the northwestern end of the Base, uncovered an area of tar and asphalt. Grading in the area was suspended after the area was uncovered. Soil sampling was performed two days later and no contaminants were detected. On September 17-18, 1997, approximately 286 tons of soil were excavated and transported to the Houston County Landfill. A PSA, dated October 31, 1997, recommended NFAR at the site. The GA EPD concurred with the NFAR recommendation in a letter dated January 2, 1997 (the correct date was January 2, 1998).

Phase Status

NFA - Approved - January 2, 1998



SITE IDENTIFICATION NUMBER: SWMU No. 67

SITE DESCRIPTION: Former Building 113 Aboveground Storage Tank

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 67 - Former Building 113 Aboveground Storage Tank

Site Summary

The 2100-gallon AST at Building 113 was used to store heating oil. The AST was removed in February 1995 and sampling was performed. TPHs were detected at low levels in the soil, and no petroleum products were detected in the groundwater. The PSA, dated December 1997, recommended NFAR. The GA EPD concurred with the NFAR recommendation in a letter dated January 8, 1998.

Phase Status

NFA - Approved - January 8, 1998



SITE IDENTIFICATION NUMBER: SWMU No. 68

SITE DESCRIPTION: Former Building 245 Underground Storage Tank

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

SWMU No. 68 - Former Building 245 Underground Storage Tank

Site Summary

The 300-gallon heating oil UST at Building 245 was installed in 1955 and removed February 1, 1995. Following the removal of the UST, approximately 14 tons of soil was removed and soil sampling was performed. The only contamination that was detected was low levels of TPH at less than 10 ppm, which is well below RA levels. The PSA, dated December 1997, recommended NFAR. The GA EPD concurred with the NFAR recommendation in a letter dated January 8, 1998.

Phase Status

NFA - Approved - January 8, 1998



SITE IDENTIFICATION NUMBER: SWMU No. 70

SITE DESCRIPTION: Industrial Wastewater Treatment Plant Process Line

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Industrial Wastewater

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 70 - Industrial Wastewater Treatment Plant Process Line

Site Summary

A section of the IWTP line is located west of Page Road and north of Building 640. In late 1991, there were repeated stoppages that indicated that the pipe was collapsed or broken. The IWTP line was replaced with a new IWTP line. In August 1997, soil sampling was performed along the area of the former collapsed IWTP line. No significant contamination was found and the PSA, dated December 31, 1997, recommended NFAR at the site. The GA EPD concurred with the NFAR recommendation in a letter dated March 4, 1998.

Phase Status

NFA - Approved - March 4, 1998



SITE IDENTIFICATION NUMBER: SWMU No. 71

SITE DESCRIPTION: Hazardous Waste Container Storage Building

ENVIRONMENTAL CONCERN: N/A

CONTAMINANTS PRESENT OR SUSPECTED: N/A

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 71 - Hazardous Waste Container Storage Building

Site Summary

This site is an active facility on Robins AFB and is not involved in any environmental restoration/remediation activities.

Phase Status

Operating HWMU; NFA



SITE IDENTIFICATION NUMBER: SWMU No. 72

SITE DESCRIPTION: Heating Oil Underground Storage Tank

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

SWMU No. 72 - Heating Oil Underground Storage Tank

Site Summary

The 30,000-gallon heating oil UST was located just east of Building 644. The UST was removed on May 29, 1997, and soil sampling was performed. The only contamination detected was low levels of TPH at 37 to 49 ppm, which is below regulatory cleanup levels. The PSA, dated March 1998, recommended NFAR. The GA EPD concurred with the NFAR recommendation in a letter dated April 20, 1998.

Phase Status

NFA - Approved - April 20, 1998



SITE IDENTIFICATION NUMBER: SWMU No. 73

SITE DESCRIPTION: Old DRMO Hazardous Waste Container Storage Building

ENVIRONMENTAL CONCERN: N/A

CONTAMINANTS PRESENT OR SUSPECTED: N/A

REGULATORY MECHANISM: RCRA – GA EPD

SWMU No. 73 - Old DRMO Hazardous Waste Container Storage Building

Site Summary

This was an active HWMU. The notification of closure was submitted and subsequently approved by the GA EPD on March 8, 1989.

Phase Status

NFA - March 1989



SITE IDENTIFICATION NUMBER: SWMU No. 74

SITE DESCRIPTION: Heating Oil Underground Storage Tank

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

SWMU No. 74 - Heating Oil Underground Storage Tank

Site Summary

Geophex conducted a PSA for the Building 360 UST Site in January 1998. NFA was recommended for this heating oil UST site. Soil borings and sampling conducted during the UST removals indicated TPH contamination. Conclusions drawn from the Building 360 UST site were that “The contamination is thought to be related to jet fuel and not heating oil” and “It is believed there has been no lateral contamination movement from the Building 360 UST and any light non-aqueous phase liquid (LNAPL) movement across the water table is probably related to SWMU No. 10B”.

Additional investigation was performed at this site under the GBIA RFI Phase II to address the contribution of contamination. Based on the results of the RFI, No Further Action is recommended for this SWMU. The groundwater contamination beneath the SWMU will be addressed as part of the CAP for SWMU 10B (SS040).

Phase Status

NFA



SITE IDENTIFICATION NUMBER: SWMU No. 75

SITE DESCRIPTION: Heating Oil Underground Storage Tank

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

SWMU No. 75 - Heating Oil Underground Storage Tank

Site Summary

Geophex conducted a PSA for the Building 352 UST in January 1998. An inch of free product was discovered in one of the borings completed at Building 352. The findings from the Building 352 UST site indicated that contamination is “more indicative of petroleum products lighter than heating oil” and “Free-product encountered could be JP-4 jet fuel”.

Additional investigation was performed on this site under the GBIA RFI Phase II to address the contribution of contamination. Results of the investigation indicate that No Further Action is required for this SWMU. Groundwater beneath this SWMU will be addressed as part of the CAP for SWMU 10B (SS040).

Phase Status

RFI to be approved in July 2000.



SITE IDENTIFICATION NUMBER: SWMU No. 76

SITE DESCRIPTION: Heating Oil Underground Storage Tank

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

SWMU No. 76 - Heating Oil Underground Storage Tank

Site Summary

The 6,000-gallon heating oil UST was located behind (northeast of) Building 2076. A release reportedly resulted from an overfill spill in 1994. The UST was removed on June 8, 1994, and approximately 100 cubic yards of contaminated soils were excavated and transported to an appropriate off-site disposal facility. Also, several hot spot areas of soil contamination were excavated "sometime after December 1994", according to the PSA, dated May 1998. The PSA recommended NFAR. The GA EPD concurred with the NFAR recommendation in a letter dated June 25, 1998.

Phase Status

NFA - Approved - June 25, 1998



SITE IDENTIFICATION NUMBER: AOC No. 1 (SS36)

SITE DESCRIPTION: Area of Concern near Taxiway No.4

ENVIRONMENTAL CONCERN: Soil and Groundwater Contamination

**CONTAMINANTS PRESENT OR SUSPECTED: BTEX, TCE, 1,2
Dichloroethene, and PCE**

REGULATORY MECHANISM: RCRA/UST – GA EPD

AOC No. 1 - Area of Concern near Taxiway No.4

Site Summary

The main COCs at this site are BTEX, TCE, 1,2 DCE and PCE. This site was discovered when contamination was detected in outlying wells from IRP Site LF19. A PSA was prepared in April 1996 to determine the BTEX source and a groundwater field screening survey and a soil gas survey were conducted in this area. No on-base source for the BTEX plume was identified. However, the direction and size of the plume led to the conclusion that the source of this contamination was not located on Robins AFB.

An off-site investigation was conducted in February of 1997. This effort determined that the source of the BTEX contamination was most likely west of Robins AFB. A report notifying the GA EPD of this finding was delivered in March of 1997. This report explained the results of the investigation and concluded that the contamination originated outside the boundaries of Robins AFB. Measures to determine the source of BTEX contamination continue.

To determine the source of the solvent contamination, an RFI Work Plan was submitted to the GA EPD in April of 1997. This plan outlined the proposed investigative measures to determine the nature and extent of any TCE contamination on the site. The RFI Work Plan was approved by the GA EPD and the initial RFI groundwater investigation was completed in January 1999. During the investigation, significant levels of TCE were found at groundwater depths that had not been investigated previously. An additional investigation was completed in May 1999 which confirmed an upgradient source of TCE located off base. It was also discovered that the TCE plume extended across the north portion of Robins AFB and off-site downgradient into Department of Natural Resources property. The Draft RFI report was submitted to the GA EPD in September 1999 for review and comment.

Relative Risk

The Relative Risk for the AOC No. 1 site is rated as High. This area near Taxiway 4 is rated this way because the CHF for the BTEX in the groundwater is significant because the total concentration ratio is greater than 100. With a migration pathway factor of evident and a receptor factor of potential, the relative risk is rated as high. Once the source has been eliminated, steps will then be taken to reduce the relative risk of the site.

Phase Status

RFI



SITE IDENTIFICATION NUMBER: UXO (AOC15)

SITE DESCRIPTION: Unexploded Ordnance Site

ENVIRONMENTAL CONCERN: N/A

CONTAMINANTS PRESENT OR SUSPECTED: Unexploded Ordnance

REGULATORY MECHANISM: CERCLA – US EPA

UXO - Unexploded Ordnance Site

Site Summary

EM was conducting an environmental assessment of land used as an emergency munitions jettisoning area when EM's contractor found suspected UXO on April 28, 1998. Robins AFB immediately called in the Moody AFB Explosive Ordnance Disposal (EOD) Team and they conducted a site survey on April 29, 1998. Multiple objects were found in a 25-foot by 25-foot area. Most were determined to be old, inert training devices (anti-tank mines, anti-personnel landmines and rifle grenades). Ten additional items were suspect UXOs and were rendered safe using five pounds of C-4. No determinations could be made in the detonations as to whether the items were live munitions. Assessments of the area established that it was likely a World War II era munitions dump/burial site.

Relative Risk

The Relative Risk for this site has not been evaluated.

Phase Status

PSA



SITE IDENTIFICATION NUMBER: SS39

SITE DESCRIPTION: POL Site – Building 2070/2072

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

SS39 - POL Site – Building 2070/2072

Site Summary

This site is located at the northeast end of the Base at the east edge of the J-STARS/KC-135 parking apron. This site consists of the Aircraft Hydrant System from Buildings 2070 and 2072. Each building contained six 50,000-gallon USTs, a centrally located pumping facility, and approximately 2,800 feet of six-inch piping which conveyed fuel to six fueling hydrants located on the adjacent aircraft parking apron. These tanks were installed in 1958. Building 2072 and the six associated tanks have more recently been removed. The fuel in this area is believed to be the result of leaks and spills as the result of past operations. In 1994, tracer testing was conducted to determine the condition of the tanks. All testing indicated that there was no leakage from tanks or piping. Repairs are made periodically and there have been a number of occasions where leaks were discovered. The main COCs at this site are BTEX.

A Contamination Assessment Report was performed on the site in 1994. This report determined that there was an extensive plume of free product and that dissolved phase hydrocarbons occur in groundwater at the site. As an ICM Bioslurper system was installed at the site in 1995. This system utilized vacuum enhanced extraction to promote the flow of free product toward recovery wells. This system recovered approximately 3000 gallons of fuel from the site.

A CAP-Part A was submitted to the UST branch of the GA EPD in December 1996 and approved in June 1999. A CAP-Part B was written and finalized in September 1999 and submitted to the GA EPD for approval. Final approval came in December 1999.

Relative Risk

The Relative Risk for the 2070/2072 (AOC 6) site is rated as High. This is because the CHF for groundwater is significant because the total concentration ratio is greater than 100. With a migration pathway factor of potential and a receptor factor of identified, the relative risk is rated as high. Once the free product recovery is complete, the tanks and heavily contaminated soil are removed, and natural attenuation has had time to work, the relative risk of the site should be reduced to medium as further contamination of the groundwater is prevented.

Phase Status

CAP-Part B implementation has begun with free product removal and design of a bio remediation system.



SITE IDENTIFICATION NUMBER: ST24

SITE DESCRIPTION: UST Remediation

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

ST24 - UST Remediation

Site Summary

IRP Site ST24 was the site of the government vehicle gas station. There were three USTs at the site: one 2,000-gallon tank storing diesel fuel, one 10,000-gallon tank storing leaded gasoline, and one 25,000-gallon tank storing unleaded gasoline. The station was razed and all three USTs were removed in March of 1991.

When the tanks were removed, the site was sampled and analyses were performed for TPH and BTEX. All results were below the GA EPD limits and a closure document was submitted in June 1991 with the recommendation of NFA.

Due to administrative errors, the tank was never closed and the site was resampled in January 1999. These latter analyses included TPH, BTEX, and PAH. All results were below detection limits. New closure documents recommending NFA at the site were submitted in May 1999 and approved by the GA EPD on May 12, 1999.

Phase Status

NFA - Approved - May 12, 1999



SITE IDENTIFICATION NUMBER: ST30

SITE DESCRIPTION: UST Remediation

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

ST30 - UST Remediation

Site Summary

IRP Site ST30 consisted of a 250-gallon UST which held diesel fuel for emergency generators. The tank was abandoned in place in the mid-1980's and removed in October 1990.

A site characterization was done in February 1991 and samples were analyzed for TPH. Four additional borings were completed and samples were analyzed for TPH and BTEX in August 1992. The analytical results from the 1992 samples were below the GA EPD limits.

A closure document was submitted to the State in September 1991 with the recommendation of NFA. The State approved the NFAR status on November 16, 1998.

Phase Status

NFA - Approved - November 16, 1998



SITE IDENTIFICATION NUMBER: ST31

SITE DESCRIPTION: UST Remediation

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

ST31 - UST Remediation

Site Summary

IRP Site ST31 consisted of a 2,000-gallon UST located west of Building 45. It was discovered during a UST inventory in January 1990. It had been abandoned in 1980 when the Aero Club moved to a new location.

A site check was done for TPH and BTEX when the UST was removed. All results were below detection limits and a closure document was submitted to the GA EPD in June 1991 with the recommendation of NFA. Due to administrative errors, the tank was never closed and the site was resampled in January 1999. Analyses included TPH, BTEX, and PAH. Again, all results were below detection limit.

A new closure document was submitted to the GA EPD in March 1999 with the recommendation for NFA. The NFA status was approved by the GA EPD on September 13, 1999.

Phase Status

NFA - Approved - March 1999



SITE IDENTIFICATION NUMBER: ST32

SITE DESCRIPTION: UST Remediation

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA/UST – GA EPD

ST32 - UST Remediation

Site Summary

IRP Site ST32 consisted of a 1,500-gallon UST which held diesel fuel. The tank was abandoned in place around 1970 and removed in October 1989.

When the tank was removed, soil samples were collected from the excavation and sampled for BTEX. The analyses for these samples showed BTEX contamination over the GA EPD limits. As a result, an additional 200 cubic yards of soil was excavated in March 1992 and the area was resampled.

The results from this latter analysis indicated that the side of the excavation facing Building 173 remained contaminated; however, due to structural limitations, the excavation could not be extended.

A bioventing system was installed to enhance the natural attenuation of the remaining contaminants and was operated for 3 years. Additional samples were collected in August 1996 and analyzed for BTEX.

A closure document was submitted to the GA EPD on April 24, 1997, and the recommendation of NFAR was approved on June 18, 1998.

Phase Status

NFA - Approved - June 18, 1998



SITE IDENTIFICATION NUMBER: ST33

SITE DESCRIPTION: UST Remediation

ENVIRONMENTAL CONCERN: Soil Contamination

CONTAMINANTS PRESENT OR SUSPECTED: Petroleum Hydrocarbons

REGULATORY MECHANISM: RCRA – GA EPD

ST33 - UST Remediation

Site Summary

IRP Site ST33 consisted of a 20,000 gallon capacity UST which held JP-4 as a fuel for an engine test facility that had been located at Building 181 until the early 1980's. The UST was removed in October 1989. It was approximately half full of JP-4 at the time of removal.

At the time of removal, soil samples were taken from the bottom of the excavation and analyzed for TPH and BTEX. The analytical results indicated 600 mg/kg TPH and below the GA EPD limits for BTEX. Four additional soil borings were collected and reanalyzed for TPH. The results from these additional borings showed TPH concentrations ranging from 11-19 mg/kg.

A closure document was submitted to the GA EPD in June 1991 with the recommendation of NFA because the contaminant concentrations were below the GA EPD limit of 100 mg/kg for TPH. Due to administrative errors, the tank was never closed and the site was resampled in January 1999. Analyses included TPH, BTEX, and PAH. The analytical results from this second sample collection were below detection limit for all analytes.

A new closure document was submitted to the GA EPD in March 1999 with the recommendation for NFA.

Relative Risk

The Relative Risk for this site has not been evaluated.

Phase Status

NFA - Submitted - March 1999

Table 1
History of Base Operations for Robins Air Force Base

Period	Types of Operations	Hazardous Substance Activities
Pre-1941	Farmland, Swamp/Lowland	None
1941-1943	Base Construction	Construction
1943-1945	Flight Training Center Maintenance and Supply Depot - B-17, 26 and 29 Bombers - C-46, 47, 54, and 60 Cargo Aircraft - A-20 Recon and 26 Attack Aircraft	Base landfills, Airplane/Automotive Fuel Storage, Hangars, Machine Shops, Wastewater Treatment Facility, Fire Protection Training Areas
1945-1956	Maintenance and Supply - B-29 Bombers - C-119 and Other Cargo Aircraft - C-130 Transport	Landfills, Fuel and Oil Storage, Low Level Radioactive Disposal, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop
1956-1961	Maintenance Supply - C-124 and 133 Cargo Aircraft - C-130 Transport	Landfills, Fuel and Oil Storage, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop
1961-1968	Logistics - C-7 and 123 Cargo Aircraft - C-130 and C-141 Transports	Landfills, Fuel and Oil Storage, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop
1968-1983	Operations - B52 Bombers Logistics - C-130 and 141 Transports - F-15 Fighters - Electronic Repair Center	Weapons Storage Area, Landfills, Fuel and Oil Storage, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop
1983-1995	Operations - B-52 Bombers - KC-135 Refuel Aircraft Logistics - C-130 and 141 Transports - F-15 Fighters	Fuel and Oil Storage, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop, Maintenance Facilities
1995- Present	Operations - B-1B Bombers - KC-135 Refuel Aircraft - Joint STARS Logistics - C-5, 130, and 141 Transports - F-15 Fighters	Fuel and Oil Storage, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop, Maintenance Facilities

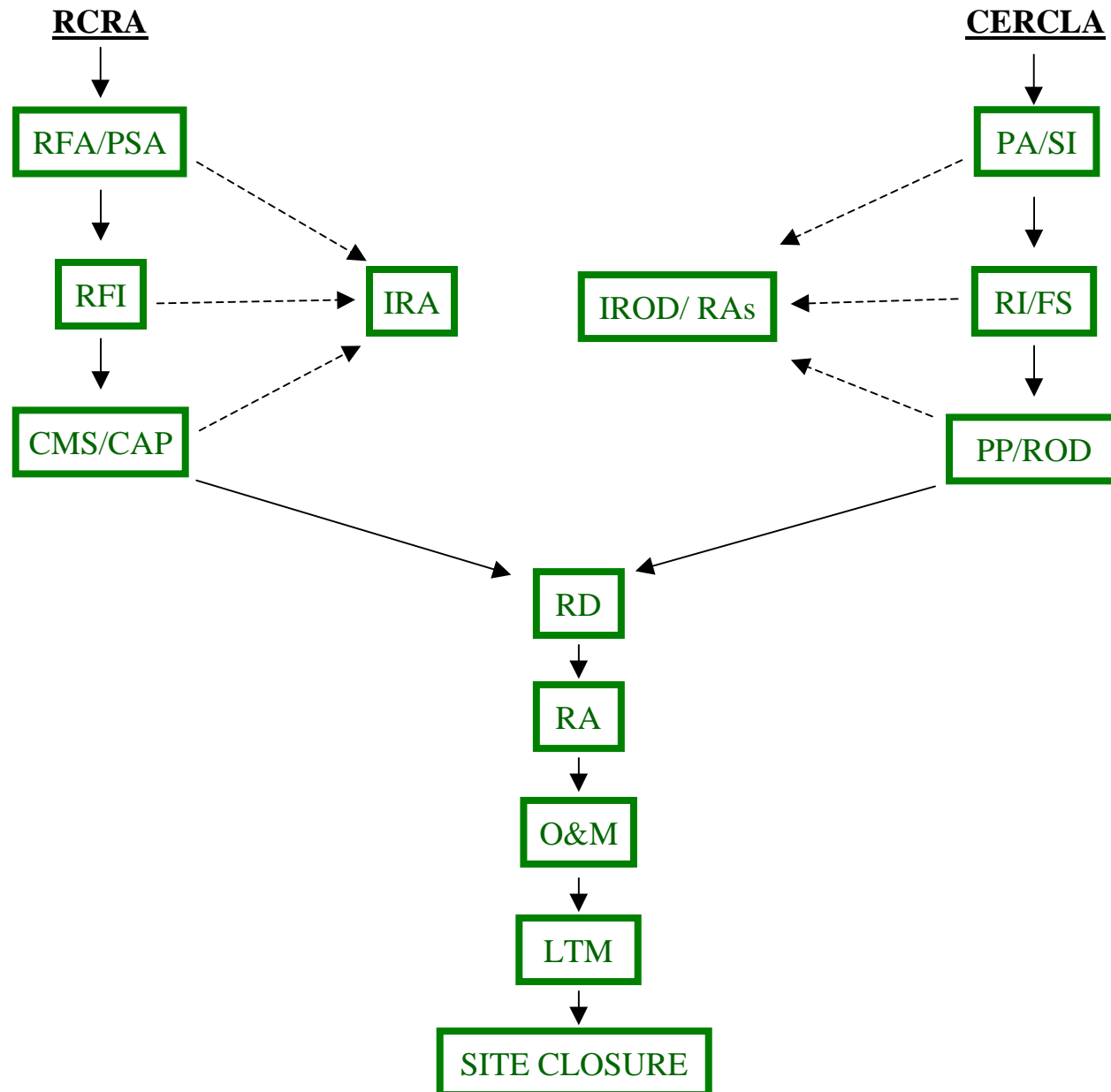
Table 2
Index of Robins Air Force Base Environmental Sites

SWMU No.	IRP No.	Site Description
1	LF01	Landfill No. 1
2	LF02	Landfill No. 2
3	LF03	Landfill No. 3
4	LF04	Landfill No. 4
5	FT05	Fire Protection Training Area No. 1
6	FT06	Fire Protection Training Area No. 2
7	FT07	Fire Protection Training Area No. 3
8	FT08	Fire Protection Training Area No. 4
9	SS09	DDT Spill Site, Buildings 295 & 296
10A	SS10	JP4 Spill Site A
10B	SS40	JP4 Spill Site B
11	SS11	PCB Spill Site
12	WP12	Hazardous Waste Disposal Site
13	WP13	Laboratory Chemical Disposal Area
14	WP14	Sludge Lagoon
15	RW15	Low Level Radioactive Burial Site
16	OT16	Well No. 8 TCE Contamination
17	OT17	Building 645 TCE Contamination
18	LF18	Construction Debris Landfill East of Building 1400 (Pave Paws)
19	LF19	Construction Debris Landfill at North End of Base
20	OT20	Greater Base Industrial Area TCE Groundwater Contamination
21	OT21	Corrosion Control Facility at Building 80
22	OT22	Satellite Storage Area Southeast of Building 361
23	OT23	Sanitary Sludge Placement Area Southeast of Building 361
24	N/A	Former Waste Solvent Underground Storage Tank at Building 645
25	OT25	Pasture Disposal Site
26	OT26	Off-Base Drum Disposal Site
27	OT27	Gas Line Road Dump Site
28	N/A	Purge Fluid Leak at Building 45
29	OT29	Duck Lake and Stream Southeast of Buildings 295 and 296
30	N/A	Building 1601 - RCRA Hazardous Waste Container Storage Building - Defense Reutilization and Marketing Office (DRMO)
31	N/A	Building 352 - RCRA Hazardous Waste Container Storage Building
32	N/A	Building 369 - Dioxin Container Storage Building
33	AOC1	SAC Drum Site
34	AOC3	Fire Fighting Foam Lagoon
35	N/A	Methyl Ethyl Ketone Unit at Building 680
36	DC34	Horse Pasture Trench Disposal Sites
37	OT20	Solvent Reclamation Area (Building 181)
38	OT20	Industrial Waste Treatment Plant Nos. 1 & 2 at Building 141
39	OT20	Metal Finishing Shop at Building 142
40	OT20	Machine Shop at Building 140
41	N/A	Civil Engineer Pole Yard and Transformer Storage Yard

Table 2
Index of Robins Air Force Base Environmental Sites (con't)

SWMU No.	IRP No.	Site Description
42	N/A	Former Transformer Storage Site at Building 1178
43	SS35	Plastic Shop Baghouses at Building 670 (Former Dry Cleaning Facility)
44	N/A	Phenolic Treatment Facility at Building 363
45	N/A	Chemical Site No. 25 and Truck Wash Area
46	N/A	Vehicle Steam Cleaning Area at Building 319
47	N/A	Aboveground Diesel Fuel Storage Tank at Building 177 and Fuel Line to Steam Plant
48	DC34	Miscellaneous Disposal Sites
49	DC34	Horse Pasture West of Site RW15
50	N/A	Fire Protection Training Area No. 5
51	N/A	Oil/Water Separator at Building 680
52	N/A	Chemical Storage Shed at Building 680
53	AOC8	Storm Sewer System from Base Industrial Area to Outfall 009
54	OT20	Industrial Wastewater Treatment Plant Process Line Between Building Nos. 141 & 142
55	SS40	Soil Contamination at Monitoring Well RB20MW6
56	AOC11	Jet Engine Maintenance Building Nos. 145, 256, & 257
57	OT41	Twin 72-inch Underground Storm Drain Culvert System Through South Flightline
58	AOC13	Underground Culvert/Storm Drain from the Base Industrial Area to Drainage Ditch at Fire Protection Training Area No. 3
59	N/A	JP-8 Product Line Along Main Controlled Taxiway
60	N/A	JP-8 Product Line Near Intersection of Taxiway No. 2 and Taxiway No. 3
61	N/A	JP-8 Product Line Near South End of Main Runway
62	OT37	Third Street Storm Sewer and Outfall
63	OT38	Test Firing Range for M61-20mm Guns
64	N/A	Two Former Heating Oil Tanks at Building 993
65	N/A	Former Heating Oil Tanks at Building 994
66	N/A	Tarpit at ANG B-1 Site
67	N/A	Former Building 113 Aboveground Storage Tank
68	N/A	Former Building 245 Underground Storage Tank
70	N/A	Building 640 Industrial Wastewater Treatment Plant Process Line
71	N/A	Building 359- RCRA Hazardous Waste Container Storage Building
72	N/A	Building 644 Heating Oil Underground Storage Tank
73	N/A	Building 325 - Old DRMO RCRA Hazardous Waste Container Storage Building
74	N/A	Building 360 Heating Oil Underground Storage Tank
75	N/A	Building 352 Heating Oil Underground Storage Tank
76	N/A	Building 2076 Heating Oil Underground Storage Tank
AOC1	SS36	Area of Concern near Taxiway No. 4
N/A	AOC15	Unexploded Ordnance (UXO) Site
N/A	SS39	Building 2070/ 2072 POL Site
N/A	ST24	UST Remediation, Building 303
N/A	ST30	UST Remediation, Building 272
N/A	ST31	UST Remediation, Building 45
N/A	ST32	UST Remediation, Building 173
N/A	ST33	UST Remediation, Building 181

Chart 1 The IRP Process



RFA/PSA - RCRA Facility Assessment/Potential Source Assessment
RFI - RCRA Facility Investigation
CMS/CAP - Corrective Measures Study/Corrective Action Plan
IRA - Interim Remedial Action
PA/SI - Preliminary Assessment/Site Inspection
RI/FS - Remedial Investigation/Feasibility Study
PP/ROD - Proposed Plan/Record of Decision
IROD/RAs - Interim Record of Decision/Removal Actions
RD - Remedial Design
RA - Remedial Action
O&M - Operations and Maintenance
LTM - Long Term Monitoring

RCRA

RCRA Facility Assessment/Potential Source Assessment: A study conducted to identify individual sites, SWMUs, that could pose a hazard to public health or the environment. If no hazard exists, the SWMU is categorized as “No Further Response Action Planned” (NFRAP).

RCRA Facility Investigation: An investigative phase to fully delineate the contamination at the site. The information that is gathered in this step is used to determine a cleanup strategy.

Corrective Measures Study/Corrective Action Plan: The CMS is the process for evaluating potential cleanup alternatives that will provide adequate remediation to meet the regulatory standards. After the CMS is complete, the CAP is prepared outlining existing data, the results of the CMS, and presenting the proposed corrective action. The CAP is submitted for formal regulatory review.

Interim Remedial Actions: Clean-up measures that are directed to address an imminent threat to public health or control contaminant releases to the environment. These may be initiated at anytime during the process and do not necessarily bring the site to close out.

CERCLA

Preliminary Assessment/Site Inspection: A study to identify sites that may pose hazards to public health or the environment. Sites are scored using a Hazard Ranking System (HRS) based on the amount/toxicity of the contamination and the potential for migration/human exposure. If a site receives a sufficiently high score, it is proposed for inclusion on the National Priorities List (NPL).

Remedial Investigation/Feasibility Study: An investigative phase to fully delineate the contamination at the site (RI) and an evaluation of potential cleanup strategies (FS).

Proposed Plan/Record of Decision: The PP describes the proposed clean-up method in a formal document that is released for public comment. After public comments are reviewed and an agreement is reached with appropriate regulatory authorities, the ROD is a record of the legal decision for site cleanup.

Interim ROD/Removal Actions: Clean-up measures that are directed to address an imminent threat to public health or control contaminant releases to the environment. These may be initiated at anytime during the process and do not necessarily bring the site to close out. If an IROD is used, the process includes a formal regulatory review.

Remedial Design: A detailed engineering design for the cleanup technology outlined in the CAP or ROD.

Remedial Action: The implementation phase of the corrective action including: construction and installation.

Operations and Maintenance: Operation and maintenance of the approved corrective action to reduce the contaminant levels to meet required regulatory levels.

Long Term Monitoring: Testing conducted to assure that the corrective action is removing contaminants and to determine when contaminant levels have stabilized below the required regulatory levels. Even after the corrective action is complete, LTM may continue to ensure that contaminant levels remain below the regulatory limits.

Site Closure: Site is considered closed when no further response is required to protect human health and the environment.